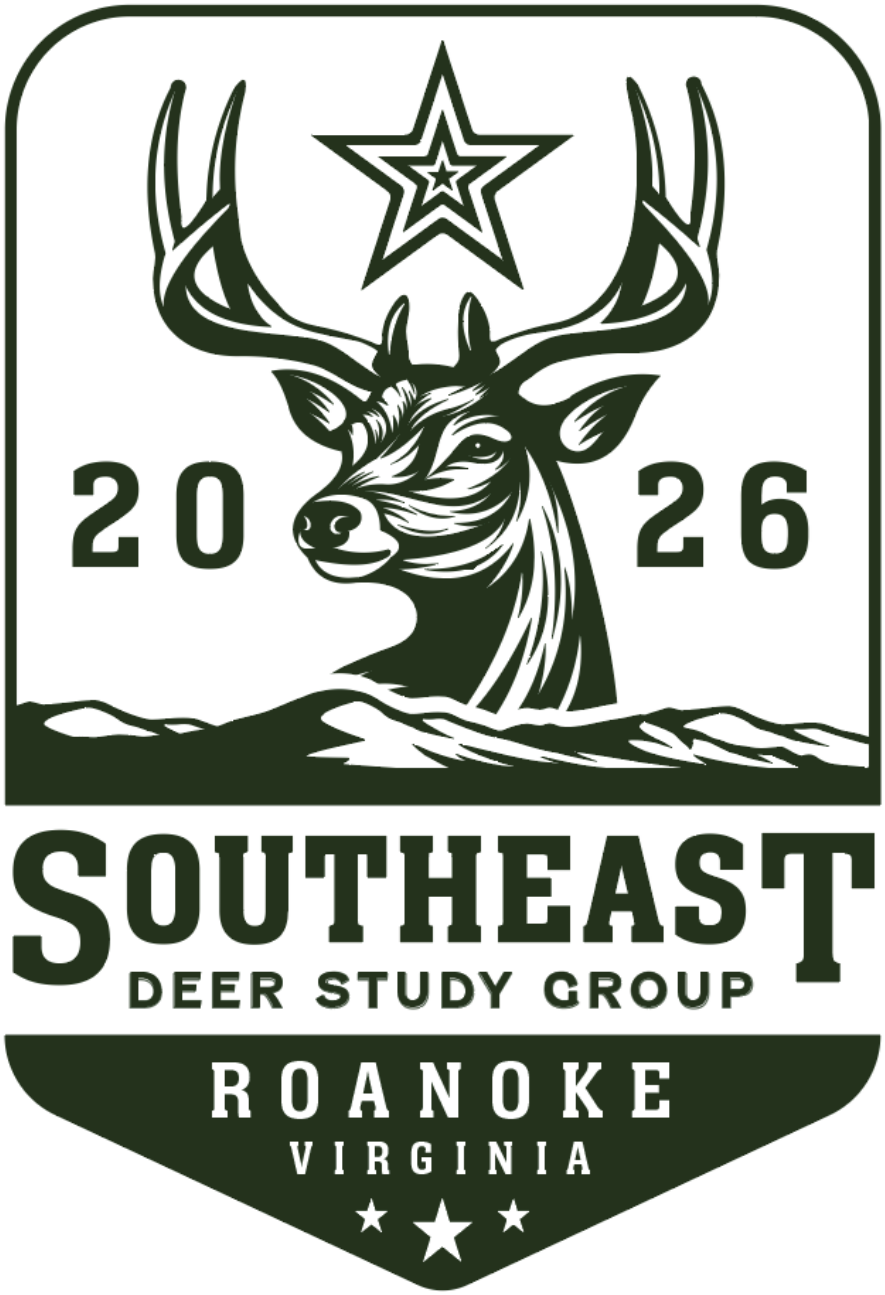
49TH ANNUAL MEETING



Ruminating on deer, hunting, and what's next: Are we at a tipping point?

February 22-24, 2026

Hotel Roanoke and Conference Center | Roanoke, VA

Hosted by the Virginia Department of Wildlife Resources

THANK YOU TO ALL OF OUR SPONSORS AND DONORS!

Platinum

VALE

MUDDY

STEALTH CAM

HuntStand

ON X HUNT

Gold

GREEN TOP EST. 1947

Silver

Carter CAT

Dominion Energy

Powering Your Every D

ATS ADVANCED TELEMETRY SYSTEMS

VIRGINIA DEER HUNTERS ASSOCIATION Est. 1985

APPALACHIAN HABITAT ASSOCIATION

NATIONAL DEER ASSOCIATION

Westervelt Westervelt Recreation

Bronze

VT COLLEGE OF NATURAL RESOURCES AND ENVIRONMENT FISH AND WILDLIFE CONSERVATION VIRGINIA TECH

OUTDOOR ACCESS

NoahHorn WELL DRILLING

BIWFC BOTSTIBER INSTITUTE FOR WILDLIFE FERTILITY CONTROL

THE IZAAK WALTON LEAGUE OF AMERICA

JAMES RIVER EQUIPMENT

FARM BUREAU VIRGINIA

VIRGINIA'S BLUE RIDGE

RMS Creating Forest Value Since 1950

Priogen

Ray Carter (Personal Donation)

Contributor

HOLLOW TOOTH VIRGINIA RESTORING BALANCE

VIRGINIA EST. 1941 BOWHUNTERS ASSOCIATION

Virginia National Wild Turkey Federation

WILDLIFE FOUNDATION OF VIRGINIA

SWVA Sportsmen

BOXLEY

RESPONSIVE MANAGEMENT

StewardGreen Wildlife Habitat Solutions

Nutrien

Rockingham County Branch-NDA

In memory of Gary Cave

CONTENTS

Free WiFi Available
Network: **Hilton Honors**
Code: **sdsg2026**

WELCOME AND ACKNOWLEDGEMENTS

The Virginia Department of Wildlife Resources (VDWR) welcomes you to the **49th annual meeting of the Southeast Deer Study Group** in the "Star City" of Roanoke, Virginia! We are proud to be hosting again in the state where it all started in 1977.

This year's meeting would not be possible without the generous support of our sponsors and donors shown on the inside cover.

We would like to recognize Justin Folks, Nelson Lafon, and Katie Martin of VDWR for planning and organizing the meeting and other VDWR staff who assisted on site to make sure the meeting ran smoothly (Ryan Brown, Ethan Chapmon, Ali Davis, David Garst, Alexandra Lombard, Sarah Peltier, Seth Thompson, and John Tracey), We acknowledge Major Frank Spuchesi for assistance with securing the buck display; William Arnold for designing the meeting logo; Michelle Carter and Leland Shelton of Virginia Tech's Department of Continuing and Professional Education for their assistance with registration and meeting planning/logistics; and Elizabeth Sandoz and Megan Jackson of Hotel Roanoke for their assistance and hospitality at this beautiful facility. Thanks to Gino D'Angelo, chair of SE Deer Study Group, for his guidance and direction; to Vanessa Lane and Angela Larsen-Gray, treasurers for SE Section of The Wildlife Society, for setting up an account and managing funds; to previous meeting hosts, Johnathan Bordelon, Brett Skelly, Jonathan Trudeau, and Sam Millman for sharing information and their experience; to the Abstract Review Committee (Justin Folks, Katie Martin, Nelson Lafon, Kip Adams, Mark Ford, and Cale Godfrey); and to the plenary panel (Max Goldman, Kip Adams, Mark Duda, David Drake, and Tony DeNicola).

AGENDA

Time		Location
Sunday, February 22		
12:00 pm - 6:00 pm	Conference Registration Desk Open	North Entry
12:00 pm - 6:00 pm	Exhibitor Set-up	Roanoke Foyer
12:00 pm - 6:00 pm	Poster Set-up	Roanoke Foyer
3:00 pm - 5:00 pm	Southeast Deer Study Group Steering Committee Meeting (Invite Only)	Crystal Ballroom DE
5:00 pm - 6:30 pm	Dinner (on your own)	
6:00 pm - 9:00 pm	Welcome Reception (heavy hors d'oeuvres)	Roanoke Foyer
Monday, February 23		
7:00 am - 8:00 am	Breakfast (on your own) – refreshment service begins at 7:30	
7:00 am - 8:00 am	Conference Registration Desk Open	North Entry
8:00 am - 8:10 am	Welcome and Introduction	Roanoke Ballroom C-H
8:10 am - 10:10 am	Plenary Session	Roanoke Ballroom C-H
10:10 am - 10:30 am	Break	
10:30 am - 11:30 am	Technical Session 1	Roanoke Ballroom C-H
11:30 am - 1:20 pm	Lunch (on your own)	
1:20 pm - 3:00 pm	Technical Session 2	Roanoke Ballroom C-H
3:00 pm - 3:20 pm	Break	
3:20 pm - 5:00 pm	Technical Session 3	Roanoke Ballroom C-H
5:00 pm - 6:30 pm	Dinner (on your own)	
6:30 pm - 7:30 pm	Poster and Sponsor Social	Roanoke Foyer
7:30 pm - 9:00 pm	Shoot From the Hip: Is deer management at a tipping point?	Roanoke Ballroom C-H
Tuesday, February 24		
7:00 am - 8:00 am	Breakfast (on your own) – refreshment service begins at 7:30	
8:00 am - 9:40 am	Technical Session 4	Roanoke Ballroom C-H
9:40 am - 10:00 am	Break	
10:00 am - 11:40 am	Technical Session 5	Roanoke Ballroom C-H
11:40 am - 1:20 pm	Lunch (on your own)	
1:20 pm - 2:40 pm	Technical Session 6	Roanoke Ballroom C-H
2:40 pm - 3:00 pm	Break	
3:00 pm - 4:40 pm	Technical Session 7	Roanoke Ballroom C-H
4:45 pm - 5:45 pm	SEDSG Technical Committee Business Meeting (Invite Only)	Shenandoah
5:30 pm - 6:30 pm	Pre-Awards Dinner Social	Roanoke Foyer
6:30 pm - 8:30 pm	SEDSG Awards Dinner	Crystal Ballroom

The Southeast Deer Study Group meets annually for researchers and managers to share the latest information on the most important wildlife species in North America. These meetings provide an important forum for the sharing of research results, management strategies, and discussions that can facilitate the timely identification of, and solutions to, problems relative to the management of white-tailed deer.

The Annual Southeast Deer Study Group Meeting is hosted with the support of the directors of the Southeastern Association of Fish and Wildlife Agencies as well as the directors of Delaware, Maryland, Missouri, and Texas. The first meeting was held as a joint Northeast – Southeast Meeting in Virginia in 1977. Appreciating the economic, aesthetic, and biological value of the white-tailed deer in the southeastern United States, the desirability of conducting an annual Southeast Deer Study Group Meeting was recognized and urged by the participants. Since February 1979, these meetings have been held annually for the purpose of bringing together managers, researchers, administrators, and users of this vitally important renewable natural resource. A searchable list of all presentation abstracts from 1977 to present is available at SEDSG.com, as well as a list of the meetings, their locations, and themes.

The Southeast Deer Study Group was formed as a subcommittee of the Forest Game Committee of the Southeastern Section of The Wildlife Society. The Deer Subcommittee was given full committee status in November 1985 at the Southeastern Section of The Wildlife Society's annual business meeting. States participating regularly in the Southeast Deer Study Group include Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, Missouri, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

Qualifying Statement

Abstracts in the proceedings and presentations at the Southeast Deer Study Group meeting often contain preliminary data and conclusions that have not undergone the peer-review process. This information is provided to foster communication and interaction among researchers, biologists, and deer managers. Commercial use of any of the information presented in conjunction with the Annual Meeting of the Southeast Deer Study Group is prohibited without written consent of the author(s). Electronic versions of this and previous proceedings are available at SEDSG.com. Participation of any vendor/donor/exhibitor with the Annual Meeting of the Southeast Deer Study Group does not constitute nor imply any endorsement by the Southeast Deer Study Group, the Southeast Section of The Wildlife Society Deer Committee, the host state, or meeting participants.

SOUTHEAST DEER STUDY GROUP MEETING HISTORY

Year	Location	Meeting Theme
1977	Fort Pickett, VA	None
1979	Mississippi State, MS	None
1980	Nacogdoches, TX	None
1981	Panama City, FL	Antlerless Deer Harvest Strategies
1982	Charleston, SC	None
1983	Athens, GA	Deer Damage Control
1984	Little Rock, AR	Dog-Deer Relationships in the Southeast
1985	Wilmington, NC	Socio-Economic Considerations in Managing White-tailed Deer
1986	Gatlinburg, TN	Harvest Strategies in Managing White-tailed Deer
1987	Gulf Shores, AL	Management: Past, Present, and Future
1988	Paducah, KY	Now That We Got Em, What Are We Going To Do With Em?
1989	Oklahoma City, OK	Management of Deer on Private Lands
1990	Pipestem, WV	Addressing the Impact of Increasing Deer Populations
1991	Baton Rouge, LA	Antlerless Deer Harvest Strategies: How Well Are They Working?
1992	Annapolis, MD	Deer Versus People
1993	Jackson, MS	Deer Management: How We Affect Public Perception and Reception
1994	Charlottesville, VA	Deer Management in the Year 2004
1995	San Antonio, TX	The Art and Science of Deer Management: Putting the Pieces Together
1996	Orlando, FL	Deer Management Philosophies: Bridging the Gap Between the Public and Biologists
1997	Charleston, SC	Obstacles to Sound Deer Management
1998	Jekyll Island, GA	Factors Affecting the Future of Deer Hunting
1999	Fayetteville, AR	QDM: What, How, Why, and Where?
2000	Wilmington, NC	Managing Deer in Tomorrow's Forests: Reality vs. Illusion
2001	St. Louis, MO	From Lewis and Clark to the New Millenium: The Changing Face of Deer Management
2002	Mobile, AL	Modern Deer Management: Balancing Biology, Politics, and Tradition
2003	Chattanooga, TN	Into the Future of Deer Management: Where Are We Heading?
2004	Lexington, KY	Today's Deer Hunting Culture: Asset or Liability?
2005	Shepherdstown, WV	The Impact of Today's Choices on Tomorrow's Deer Hunters
2006	Baton Rouge, LA	Managing Habitats, Herds, Harvest, and Hunters in the 21st Century Landscape. Will 20th Century Tools Work?
2007	Ocean City, MD	Deer and Their Influence on Ecosystems
2008	Tunica, MS	Recruitment of Deer Biologists and Hunters: Are Hook and Bullet Professionals Vanishing?
2009	Roanoke, VA	Herds Without Hunters: The Future of Deer Management?
2010	San Antonio, TX	QDM to IDM: The Next Step or the Last Straw?
2011	Oklahoma City, OK	All Dressed Up with No Place To Go: The Issue of Access
2012	Sandestin, FL	Shifting Paradigms: Are Predators Changing the Dynamics of Managing Deer in the Southeast?
2013	Greenville, SC	Challenges in Deer Research and Management in 2013

SEDSG Meeting History continued

Year	Location	Meeting Theme
2014	Athens, GA	The Politics of Deer Management: Balancing Public Interest and Science
2015	Little Rock, AR	Integrating the North American Model of Wildlife Conservation into Deer Management
2016	Concord, NC	The Challenges of Meeting Hunter Expectations
2017	St. Louis, MO	Disease: Science, Politics, and Management
2018	Nashville, TN	Stakeholder-focused, Science-based, and Data-driven: The Gold Standard for the State Deer Management System?
2019	Louisville, KY	Deer, It's What's for Dinner
2020	Auburn, AL	Deer Management in a Rapidly Changing World: Bridging a Generational Disconnect
2021	Virtual	Pandemic or Prospect: Managing Deer and Recruiting Hunters in 2021
2022	Virtual	The Importance of Deer and Deer Hunters to the American Public
2023	Baton Rouge, LA	Managing Deer When Normal Isn't Normal Anymore
2024	Shepherdstown, WV	In Our Pursuit of Management, Let's Not Forget Our Foundation
2025	Cambridge, MD	Bridging the Latitudes: White-tailed Deer Disease Research & Management
2026	Roanoke, VA	Ruminating on deer, hunting, and what’s next: Are we at a tipping point?
2027	Starkville, MS	TBD

COMMITTEE MEMBERS

Southeast Deer Study Group, The Wildlife Society, Southeast Section

STATE	NAME	AFFILIATION
Alabama	Courtenay Conring	Alabama Division of Wildlife and Fisheries
	Kevin McKinstry	The Westervelt Company
Arkansas	Ralph Meeker	Arkansas Game and Fish Commission
	Jeremy Brown	Arkansas Game and Fish Commission
Delaware	Sam Millman	Delaware Division of Fish & Wildlife
Florida	Cory Morea	Florida Fish & Wildlife Conservation Commission
	Becky Peters	Florida Fish & Wildlife Conservation Commission
	Steve Shea	Shea Wildlife & Environmental Services, Inc.
Georgia	Charlie Killmaster	Georgia Department of Natural Resources
	Kevin Rose	Georgia Department of Natural Resources
	Gino D'Angelo (Chairman)	Warnell School of Forestry and Natural Resources
Kentucky	Joe McDermott	Kentucky Department of Fish and Wildlife Resources
Louisiana	Johnathan Bordelon	Louisiana Department of Wildlife and Fisheries
	Brad Kennon	Louisiana Department of Wildlife and Fisheries
Maryland	Jonathan Trudeau	Maryland Department of Natural Resources
	Kevin Lamp	Maryland Department of Natural Resources
Mississippi	William McKinley	Mississippi Dept. of Wildlife, Fisheries, & Parks
	Stan Priest	Mississippi Dept. of Wildlife, Fisheries, & Parks
	Eric Michel	Mississippi State University
Missouri	Jason Isabelle	Missouri Department of Conservation
	Ashleigh McCullough-Day	Missouri Department of Conservation
North Carolina	April Boggs Pope	North Carolina Wildlife Resources Commission
Oklahoma	Dallas Barber	Oklahoma Department of Wildlife Conservation
South Carolina	Charles Ruth	South Carolina Department of Natural Resources
	Jay Cantrell	South Carolina Department of Natural Resources
Tennessee	Adam Edge	Tennessee Wildlife Resources Agency
	Craig Harper	University of Tennessee
Texas	Blaise Korzekwa	Texas Parks & Wildlife Department
	Bob Zaiglin	Southwest Texas College
Virginia	Justin Folks	Virginia Department of Wildlife Resources
	Katie Martin	Virginia Department of Wildlife Resources
West Virginia	Brett Skelly	West Virginia Division of Natural Resources
National Deer Association	Kip Adams	
U.S. Fish & Wildlife Service	Larry Williams	
At Large Member	James Kelly	

SOUTHEAST DEER STUDY GROUP AWARDS

Career Achievement Award

1996	**Richard F. Harlow**
1997	**Larry Marchinton**
1998	**Harry Jacobson**
1999	**David C. Guynn, Jr.**
2000	**Joe Hamilton**
2002	**Robert L. Downing**
2004	**Charles DeYoung**
2005	**Kent E. Kammermeyer**
2006	**William E. "Bill" Armstrong**
2007	**Jack Gwynn**
2009	**David E. Samuel**
2010	**Bob K. Carroll**
2011	**QDMA**
2012	**Robert E. Zaiglin**
2014	**Mark O. Bara**
2015	**Larry E. Castle**
2016	**J. Scott Osborne**
2017	**Karl V. Miller**
2018	**Steve Demarais**
2019	**W. Matt Knox**
2020	**Charles Ruth**
2024	**Craig Harper**
2025	**Robert J. Warren**

Outstanding Student Poster Award

2010	**Emily Flinn**	Mississippi State University
2011	**Melissa Miller**	University of Delaware
2012	**Brandi Crider**	Texas A&M University-Kingsville
2013	**Jacob Haus**	University of Delaware
2014	**Blaise Korzekwa**	Texas A&M University-Kingsville
2015	**Lindsay D. Roberts**	Texas A&M University-Kingsville
2016	**Lindsey Phillips**	Texas A&M University-Kingsville
2017	**Daniel Morina**	Mississippi State University
2018	**Onalise R. Hill**	Texas A&M University-Kingsville
2019	**Zachary Wesner**	University of Georgia
2020	**Lindsey M. Phillips**	University of Tennessee
2021	**Michael Muthersbaugh**	Clemson University
2022	**Lindsey Phillips**	University of Tennessee
2023	**Breanna R. Green**	Texas A&M University-Kingsville
2024	**Luke Resop**	Mississippi State University
2025	**Nathan Cowley**	Mississippi State University

Outstanding Student Oral Presentation Award

1996	**Billy C. Lambert, Jr.**	Texas Tech University
1997	**Jennifer A. Schwartz**	University of Georgia
1998	**Karen Dasher**	University of Georgia
1999	**Roel R. Lopez**	Texas A&M University
2000	**Karen Dasher**	University of Georgia
2001	**Roel R. Lopez**	Texas A&M University
2002	**Randy DeYoung**	Mississippi State University
2003	**Bronson Strickland**	Mississippi State University
2004	**Randy DeYoung**	Mississippi State University
2005	**Eric Long**	Penn State University
2006	**Gino D'Angelo**	University of Georgia
2007	**Sharon A. Valitzsi**	University of Georgia
2008	**Cory L. Van Gilder**	University of Georgia
2009	**Michelle Rosen**	University of Tennessee
2010	**Jeremy Flinn**	Mississippi State University
2011	**Kamen Campbell**	Mississippi State University
2012	**Brad Cohen**	University of Georgia
2013	**Michael Cherry**	University of Georgia
2014	**Brad Cohen**	University of Georgia
2015	**Eric Michel**	Mississippi State University
2016	**Rebecca Shuman**	University of Georgia
2017	**Jared Beaver**	Texas A&M University
2018	**Dan Morina**	Mississippi State University
2019	**C. Moriah Boggess**	Mississippi State University
2020	**Jordan R. Dyal**	University of Georgia
2021	**Seth T. Rankins**	Texas A&M University
2022	**Blaise Newman**	University of Georgia
2023	**Luke Resop**	Mississippi State University
2024	**Luke Resop**	Mississippi State University
2025	**Thomas Rovery**	University of Tennessee

ROANOKE, VIRGINIA

ORAL PRESENTATION SCHEDULE

**Denotes Student Presenter*

Monday, February 23

Time		Speaker
8:00 10:10 AM	**PLENARY SESSION** *Moderator: Justin Folks*	
8:00 - 8:05 AM	Welcome	Justin Folks, VDWR
8:05 - 8:10 AM	Welcome to Virginia	Ryan Brown, VDWR
8:10 - 8:20 AM	Intro to Plenary : Ruminating on Deer, Hunting, and What's Next: Are We at a Tipping Point?	Justin Folks, VDWR
8:20 - 8:40 AM	Wildlife Management is Comparatively Easy; Human Management is Difficult	Mark Duda
8:40 - 9:00 AM	The Role of Venison Processors and Donation Programs in Achieving Appropriate Deer Harvest Levels	Kip Adams
9:00 - 9:20 AM	From Access to Outcomes: Managing Deer Across Fragmented Landscapes	Max Goldman
9:20 - 9:40 AM	Identifying Deer Management Option Suitability in Developed Environments	Tony DeNicola
9:40 - 10:00 AM	Regulated Commercial Harvest to Manage Overabundant White-Tailed Deer: An Idea to Consider?	David Drake
10:00 - 10:10 AM	Brief Q&A (more discussion during Shoot from the Hip)	
10:30 11:30 AM	**TECHNICAL SESSION 1** *Moderator: Ali Davis*	
10:30 - 10:50 AM	A Status Update on NDA's Campaign to Improve One Million Acres of Public Land	Matt Ross
10:50 - 11:10 AM	Population Dynamics Across an Urbanization Gradient: What the Future En-"Tails" for White-tailed Deer	*Jared Lamb
11:10 - 11:30 AM	Assessing Fawn Behavioral Plasticity in Space Use Related to Antipredator Strategies	*Samuel Overfors
1:20 3:00 PM	**TECHNICAL SESSION 2** *Moderator: Alexandra Lombard*	
1:20 - 1:40 PM	Is dog hunting going to the dogs? Examining the practice of hunting deer with dogs in north Florida, USA.	*Laura Franklin
1:40 - 2:00 PM	A spatial analysis of deer-fence conflicts in metropolitan Atlanta, GA	*George Goto
2:00 - 2:20 PM	Estimating resource selection and potential carrying capacity of white-tailed deer and wild pigs to support management	Melanie Boudreau
2:20 - 2:40 PM	Parental age affects life history of offspring in white-tailed deer	*Tristan Swartout
2:40 - 3:00 PM	Effect of Antlerless Harvest Strategies on Deer Harvest in Virginia	Elizabeth Hunter
3:20 5:00 PM	**TECHNICAL SESSION 3** *Moderator: Sarah Peltier*	
3:20 - 3:40 PM	Coyote behavior negates the benefit of predator swamping in white-tailed deer	*Kevin Lovasik
3:40 - 4:00 PM	Temporal Variation in Soluble Sugar Content (Brix) of White-tailed Deer Forage	*Nickolas Walton, Jr
4:00 - 4:20 PM	Fire residence time and temperature affect hardwood tree mortality within fire season and tree species	*William Fowler
4:20 - 4:40 PM	Assessing State Wildlife Agency Communications Regarding Chronic Wasting Disease and Potential Human Health Risks	Marc Schwabenlander
4:40 - 5:00 PM	White-tailed deer anatomical photoluminescence	*Daniel DeRose-Broeckert

Time	Tuesday, February 24	Speaker
8:00 9:40 AM	**TECHNICAL SESSION 4** *Moderator: Katie Martin*	
8:00 - 8:20 AM	Deer, Drivers, and Data: Spatial and Temporal Patterns Behind Deer-Vehicle Collisions and Harvest	*Conner Mills
8:20 - 8:40 AM	Net score versus gross score: why the Boone and Crockett scoring system should count all those points	Matt Knox
8:40 - 9:00 AM	Deer and Predator Response to Seasonal Burning During Fawning Season	*Thomas Rovery
9:00 - 9:20 AM	Calf Survival and Vaginal Implant Transmitter Success in Maryland Sika Deer	*Andrew Slear
9:20 - 9:40 AM	Management scale and intensity limit forage availability on properties managed for deer	Mark Turner
10:00 11:40 AM	**TECHNICAL SESSION 5** *Moderator: David Garst*	
10:00 - 10:20 AM	Serum and hair cortisol concentrations in white-tailed deer from a high prevalence CWD area	*Cameron Mitchell
10:20 - 10:40 AM	Deer response to large-scale wildfire varies by fire intensity	*Ret Tanner
10:40 - 11:00 AM	Comparison of Regenerative and Conventional Techniques for Deer Food Plots	*Luke Resop
11:00 - 11:20 AM	Evaluation of intensive management for antler size in white-tailed deer	Randy DeYoung
11:20 - 11:40 AM	Influences of Urbanization on Survival and Cause-Specific Mortality of White-tailed Deer	*Mikiah Carver-McGinn
1:20 2:40 PM	**TECHNICAL SESSION 6** *Moderator: Ethan Chapmon*	
1:20 -1:40 PM	Mapping the Whitetail Rut in the United States	Brian Murphy
1:40 - 2:00 PM	Environmental Detection of Chronic Wasting Disease Prions in Dust: Implications for Surveillance and Biosecurity	Peter Larsen
2:00 - 2:20 PM	Closing the Data Analysis Gap: Utilizing Depth-Aware AI to Achieve Rapid, Verifiable Management Practices in an Evolving World	Joseph Porter
2:20 - 2:40 PM	National Trends in Antlerless-only Hunting Opportunities and Antlerless Harvest Preference Relative to Antlered Harvest	Ben Westfall
3:00 4:40 PM	**TECHNICAL SESSION 7** *Moderator: John Tracey*	
3:00 - 3:20 PM	New World Screwworm: Status Update and Implications for White-tailed Deer	Blaise Korzekwa
3:20 - 3:40 PM	Thirty Years of Success: SCDNR Upstate Mobility Impaired Deer Hunts	Mark Carroll
3:40 - 4:00 PM	Regulation or Education: A Modern Approach for Deer Management	Dallas Barber
4:00 - 4:20 PM	Balancing Biology and Opportunity: Antlerless Deer Harvest Management in Florida	Cory Morea
4:20 - 4:40 PM	A Retrospective Look at CWD Regulatory Complexity: Benefit or Hindrance?	Adam Edge

ORAL PRESENTATION ABSTRACTS

*DENOTES STUDENT PRESENTATION

WILDLIFE MANAGEMENT IS COMPARATIVELY EASY; HUMAN MANAGEMENT IS DIFFICULT

Mark Duda, Responsive Management

ABSTRACT:

In 1943, Aldo Leopold noted that the problem of wildlife management is not how we handle the deer. “The real problem,” according to Leopold, “is one of human management. Wildlife management is comparatively easy; human management is difficult.” With the overabundance of deer and the conflicts that inevitably arise in the Southeast United States, understanding the human dimensions of wildlife management has never been more important. This presentation will provide an overview of the human dimensions of deer management in the Southeast, including the latest public attitudes toward hunting and deer management, participation in deer hunting, attitudes toward key issues like deer population levels and Chronic Wasting Disease, and strategies for communicating persuasively about hunting as a tool for managing deer populations. Understanding the human dimensions of deer management can often mean the difference between the success or failure of wildlife programs.

CONTACT: mark@responsivemanagement.com

NOTES:

THE ROLE OF VENISON PROCESSORS AND DONATION PROGRAMS IN ACHIEVING APPROPRIATE DEER HARVEST LEVELS

Kip Adams, National Deer Association

ABSTRACT:

In the U.S., an average of 41% of hunters successfully harvested a deer in 2019 and again in 2022. However, the percentage of successful hunters was 48% in 2011, marking a 7% decline in just over a decade. Likewise, the national average for hunters harvesting two or more deer decreased from 21% to 17% over that same time. Declining success rates are not due to a lack of deer, access or tags. Current deer populations, seasons and bag limits provide abundant opportunity for hunters to harvest far more than the national average of 6,000,000 deer annually. For example, licensed Georgia hunters head afield with the ability to shoot two bucks and 10 antlerless deer, but nearly half do not harvest a single whitetail. To increase antlerless harvest, deer managers work to reduce barriers, and one major need is an accessible and inexpensive outlet for venison. Venison processors often play a crucial role acting as facilitators between hunters and food banks. They use specialized skills to process donated deer meat and ensure it is safely delivered to those in need. Their involvement supports local communities and helps combat hunger. The problem today is there are fewer processors and less hunter awareness of donation programs. Thus, the National Deer Association launched an interactive venison processor map to connect hunters with local processors and food banks. Through better collaboration, programs like these can enhance antlerless harvests and venison donations to further support wildlife management programs and communities in need.

CONTACT: kip@deerassociation.com

NOTES:

FROM ACCESS TO OUTCOMES: MANAGING DEER ACROSS FRAGMENTED LANDSCAPES

Max Goldman, Virginia Department of Wildlife Resources

ABSTRACT:

Deer are managed at a landscape scale, but hunting access is usually planned at the parcel or program level. In the eastern U.S., where private landownership and fragmented authority dominate, this disconnect routinely creates refugia and limits population-level outcomes. Simply adding more hunters or more access often fails to move the needle.

This presentation treats hunting access as a management tool, not a solution by itself. Using Virginia's quota hunts, open public access, public hunting opportunities on private lands, and cross-agency coordination, it examines what has worked, what hasn't, and why. Topics include access design (who, where, when), interaction with deer movement and landownership patterns, coordination with removal efforts, and lessons from western and other regional models that translate—or don't—to eastern landscapes.

CONTACT: max.goldman@dwr.virginia.gov

NOTES:

IDENTIFYING DEER MANAGEMENT OPTION SUITABILITY IN DEVELOPED ENVIRONMENTS

Tony DeNicola, White Buffalo, Inc.

ABSTRACT:

Hunting is often considered the universal method of managing overabundant deer populations by state wildlife agencies and some members of the public. However, the environment in which the deer reside is frequently ignored. Where deer live has an immense impact on which management method can reduce the population to desired levels. Legal constraints, such as hunting tackle setbacks, and public perceptions of safety, are common challenges that affect access. However, access is not always the impediment to success and is not relevant if hunters are unwilling, or unable, to harvest enough deer to meet management objectives. Therefore, hunting as a management tool does not necessarily mean deer are being responsibly managed. In fact, you can mismanage deer if you do not set objectives, collect data related to the program's impact, and assess how hunting may impact other potentially more effective methods. In sum, hunting is not management by default.

There is much data on what deer densities can be accomplished with different traditional and non-traditional methods. However, these data are often ignored for political expediency, misinformation, or financial constraints. Before landowners move forward with any management action they need to clearly define their objectives and select a proven management option(s) to avoid wasting time, money, and resources. Finally, our ability to manage deer effectively is not meaningfully obstructed by outside parties (e.g., animal rights activists), but from ignorance and/or indifference within the hunting community, and at times, wildlife management agencies.

CONTACT: tony.denicola@whitebuffaloinc.org

NOTES:

REGULATED COMMERCIAL HARVEST TO MANAGE OVERABUNDANT WHITE-TAILED DEER: AN IDEA TO CONSIDER?

Kurt Vercauteren[1], Charles Anderson[1], Timothy Van Deelen[2], David Drake[2], David Walter[1], Stephen Vantassel[3], and Scott Hygnstrom[3]

[1]USDA APHIS, Wildlife Services
[2]Department of Forest and Wildlife Ecology, University of Wisconsin
[3]School of Natural Resources, University of Nebraska

ABSTRACT:

Declines in hunter recruitment coupled with dramatic growth in numbers of white-tailed deer challenged our ability to manage deer populations through regulated hunting. We review the efficacy of current regulated hunting methods and explain how they are unable to reduce deer numbers sufficiently in some environments. Regulated commercial harvest would provide an additional tool to help state wildlife agencies manage overabundant populations of white-tailed deer. We outline potential means to govern regulated commercial deer harvest and explain how it is compatible with the North American Model of Wildlife Conservation. We identified several benefits, including reduced overabundant populations of deer; source of healthy, natural, green, locally produced protein; promotion of economic growth, entrepreneurship, and market expansion; and public engagement and appreciation. We also address expected concerns associated with this concept, such as privatization of wildlife; overexploitation; food safety; competition with existing commodities; law enforcement; and challenges of changing laws, regulations, and attitudes. We suggest developing a professional forum to address the issue of regulated commercial harvest of white-tailed deer and other overabundant species of wildlife.

CONTACT: ddrake2@wisc.edu

NOTES:

A STATUS UPDATE ON NDA'S CAMPAIGN TO IMPROVE ONE MILLION ACRES OF PUBLIC LAND

Matt Ross[1], Kip Adams[1], Ben Westfall[1], Nick Pinizzotto[1]

[1]National Deer Association

ABSTRACT:

Declines in access, habitat quality and deer hunter numbers each negatively impact wildlife conservation. Specifically, while most deer are hunted, harvested, and managed on private land annually (88%), research shows that groups who hunt primarily on public land tend to hunt less often compared to those that hunt private land, and a recent national report estimated that there are currently over 16 million acres of public land that outdoor enthusiasts can't effectively use. Public land hunters also increasingly fit the demographic (age, education, place of residence, and motivation) of nationally acclaimed non-traditional hunter recruitment program participants. Finally, recent trends suggest declining white-tailed deer, ruffed grouse (*Bonasa umbellus*) and other game harvests on U.S.D.A Forest Service (USFS) lands are likely the result of diminishing acreage in active forest management. Thus, the National Deer Association (NDA) decided to tackle all three issues collectively by launching a national initiative in 2021 entitled *Improving Access, Habitat and Deer Hunting on Public Lands*. This campaign has a reach goal to improve one million acres by 2026. To date NDA has implemented projects in 31 states and on 27 National Forests, which has helped improve 1,322,097 acres of public land. To achieve this NDA and its partners have invested more than $12.4 million. We will provide an overview of what has been accomplished so far, with examples of specific projects in the Southeast region.

CONTACT: matt@deerassociation.com

NOTES:

*POPULATION DYNAMICS ACROSS AN URBANIZATION GRADIENT: WHAT THE FUTURE EN-“TAILS” FOR WHITE-TAILED DEER

Jared Lamb[1], Christopher Moorman[2], Mikiah Carver-McGinn[1], Elizabeth Kierepka[3], John Kilgo[4], Nils Peterson[2], April Boggs Pope[5], Nathan Hostetter[6]

[1] North Carolina Cooperative Fish and Wildlife Research Unit, Department of Applied Ecology, North Carolina State University
[2] Fisheries, Wildlife, and Conservation Biology Program, Department of Forestry and Environmental Resources, North Carolina State University
[3] NC Museum of Natural Sciences, Department of Forestry and Environmental Resources, North Carolina State University
[4] USDA Forest Service Southern Research Station
[5] North Carolina Wildlife Resources Commission
[6] U.S. Geological Survey, North Carolina Cooperative Fish and Wildlife Research Unit, Department of Applied Ecology, North Carolina State University

ABSTRACT:

Survival, reproduction, and growth rates of white-tailed deer populations in urbanizing areas may differ from deer populations in rural landscapes. However, variation in deer population dynamics along urbanization gradients is poorly understood, and further investigation is needed to inform management strategies. Our objectives were to 1) estimate survival, reproduction, and recruitment of white-tailed deer populations across a continuous urbanization gradient (from rural to urban), and 2) project population growth rates across the urbanization gradient. We radio-collared and monitored 111 yearling/adult females, 106 neonates (0–16 weeks), and 75 fawns (17–52 weeks) in Durham and Orange counties, North Carolina from 2022-2025, as part of a multidisciplinary study to understand deer ecology across an urbanization gradient. We estimated age-class specific survival and reproduction, then fit a female based projection matrix to investigate population growth rates across the gradient. As urbanization increased, fecundity rates increased (median estimates from rural to urban: 0.44-0.77) and fawn survival decreased (0.41-0.07), while survival for yearlings (0.83-0.76) and adults (0.77-0.83) were relatively constant. Population growth rates peaked in suburban landscapes (λ = 1.01) and declined as areas became more rural and urban. Adult survival remained the most elastic vital rate, but fecundity and fawn survival contributed the most to variation in population growth rates across the urbanization gradient. Although altering adult survival provides the greatest proportional change in population growth, predation on neonates and deer-vehicle collision mortality remain important mortality sources affecting deer population growth rates in urban areas.

CONTACT: Jwlamb3@ncsu.edu

NOTES:

*ASSESSING FAWN BEHAVIORAL PLASTICITY IN SPACE USE RELATED TO ANTIPREDATOR STRATEGIES

Samuel J. Overfors[1], Tyler R. Obermoller[2], Joseph K. Bump[1], Eric S. Michel[3]

[1]University of Minnesota
[2] Minnesota Department of Natural Resources
[3] Mississippi State University

ABSTRACT:

White-tailed deer fawns can employ three anti-predator strategies to increase fitness and survival – the 'hider', characterized by reliance on cover to evade predator detection, and the 'follower', marked by increased movement and reliance on forage – with a distinct 'transitioner' strategy between them. However, characterization of fawn anti-predator strategies often assumes ubiquitous spatial responses and lacks understanding of individual variation. Our objectives were to characterize fawn spatial responses related to anti-predator behaviors and to assess variation within an agriculturally dominated landscape. We hypothesized that a majority of fawns would exhibit shifts in space use in alignment with all three anti-predator strategies as activity and habitat use shifted accordingly. We captured and GPS-collared 364 fawns in southwestern Minnesota, USA from 2021 to 2024. We conducted individual changepoint analysis using two space use statistics to detect shifts and associated individual variation. We used a set of five *a priori* models to account for changes in fawn space use. We found no single, dominant strategy in fawn summer space use, but rather detected three prominent movement strategies with varying shifting behaviors. These results suggest that anti-predator behaviors may elicit distinct spatial responses in fawns, but energy needs, available habitat, and doe behavior also shape individual responses. Behavioral plasticity at the individual scale facilitates this variation. This result indicates that there are likely benefits to providing and managing for diverse habitat that will better meet requirements of fawns and their mothers that exhibit significant individual variation in fine-scale space use.

CONTACT: overf005@umn.edu

NOTES:

*IS DOG HUNTING GOING TO THE DOGS? EXAMINING THE PRACTICE OF HUNTING DEER WITH DOGS IN NORTH FLORIDA, USA.

Laura Franklin[1], Elina Garrison[2], Rebecca Peters[2], Marcus Lashley[1]

[1]Department of Wildlife Ecology and Conservation, University of Florida
[2]Florida Fish and Wildlife Research Institute

ABSTRACT:

Dog hunting, the method of using trained dogs to hunt white-tailed deer (*Odocoileus virginianus*), is a centuries-old tradition that today is largely restricted to the southeastern USA. While the number of still-hunters across parts of the US has declined in recent years, little is known about the status of dog hunters. To examine dog hunter demographics and behavior in Florida, we surveyed over 150 permitholders for the Osceola Wildlife Management Area (WMA). Simultaneously, we reviewed temporal trends in permit applications and spatial changes in land designated for dog hunting across Florida. Finally, we compared deer activity patterns in areas designated for dog hunting to those designated for still-hunting on the Osceola WMA during the 2024-2025 permit period. Survey data showed that traditional practices associated with dog hunting were similar across age classes of hunters. Further, the annual number of permit applicants remained stable, and acreage of designated dog hunting land has increased over time in the region. Despite concerns for the practice's cultural preservation among Southeastern states, our data indicate that dog hunting culture and participation remains stable in Florida.

CONTACT: laurafranklin@ufl.edu

NOTES:

*A SPATIAL ANALYSIS OF DEER-FENCE CONFLICTS IN METROPOLITAN ATLANTA, GA

George R. Goto[1], Heather E. Gaya[1], Michel T. Kohl[1], B. Bynum Boley[1], Gino J. D'Angelo[1]

[1]University of Georgia

ABSTRACT:

In urban areas, anthropogenic infrastructure fragments natural vegetation, which forces local wildlife to interact with unnatural, human-modified landscapes. White-tailed deer (deer, Odocoileus virginianus) have become overabundant in some urban areas where they regularly interact with residential fences. Deer often become entangled in or along fence lines, leading to deer-fence conflicts (DFCs). DFCs create dangerous situations for responding wildlife personnel and are often lethal for the deer. However, despite their severity, limited research has investigated how landscape characteristics influence the distribution of DFCs, particularly in urban areas where fence densities are highest. We used a resource selection function framework with a dataset provided by the Georgia Department of Natural Resources that included 204 reported DFCs across metropolitan Atlanta, GA, from 2019 to 2024. We generated predictive models at two spatial extents: a landscape-wide analysis of an 11-county area encompassing the greater Atlanta area, and a local analysis of the area immediately surrounding conflict locations. On the landscape level, housing density and distance to tree cover were the most significant predictors of DFCs. Residential areas closest to tree cover and in areas of moderate housing density (1,500 houses/mile2) had the highest probability of DFCs. On a local scale, distance to tree cover was the only significant predictor with areas closest to tree cover having the highest probability of DFCs. Our results provide the first spatial analysis of DFCs in urban areas. Our model can provide a tool to wildlife managers, urban planners, and other stakeholders for the identification of areas of high DFC potential where mitigation actions can be applied effectively.

CONTACT: george.goto@uga.edu

NOTES:

ESTIMATING RESOURCE SELECTION AND POTENTIAL CARRYING CAPACITY OF WHITE-TAILED DEER AND WILD PIGS TO SUPPORT MANAGEMENT

Stephanie A. Cunningham[1], Bronson K. Strickland[1], Raymond B. Iglay[1], Garrett M. Street[1], Stephen Demarais[1], Kamen Campbell[2], William T. McKinley[2], Melanie R. Boudreau[1]

[1] Department of Wildlife, Fisheries and Aquaculture, Mississippi State University, Mississippi State, Mississippi, USA
[2] Mississippi Department of Wildlife, Fisheries, and Parks, Jackson, Mississippi, USA

ABSTRACT:

Understanding spatial variability in resource selection and potential carrying capacity can improve management of wildlife species. In the southeastern U.S., white-tailed deer are an important game species, yet deer management faces new threats from emerging diseases and invasive species such as wild pigs (Sus scrofa). We modelled habitat suitability for deer and wild pigs in Mississippi and used models to estimate potential carrying capacity. We then validated carrying capacity estimates using matrix population models. Deer and wild pigs selected for greater proportions of hardwood forest and decreasing distance to water. Wild pigs also selected for, while deer avoided, increasing proportions of herbaceous and shrubby land coverages. Estimated carrying capacities across suitability delineations ranged from 1.3 to 2 million deer and 370,000 to 1.2 million wild pigs. Matrix population models indicated that, at a likely maximum density of 14.3 deer/km2 under current harvest levels, the population stabilized within carrying capacity estimates, and was aligned near the state agency estimate of 1.6 million deer. The model for wild pigs created population estimates that were within carrying capacity limits but indicated that maximum density may be between 11 and 27 pigs/km2. Our maps indicate substantial overlap in areas used by both species which could lead to habitat degradation, greater interspecific competition, or accelerated disease spread when both species are at high densities. Additionally, our work supports the idea that habitat suitability can provide a good proxy for landscape scale estimates of potential carrying capacity.

CONTACT: mel.r.boudreau@gmail.com

NOTES:

*PARENTAL AGE AFFECTS LIFE HISTORY OF OFFSPRING IN WHITE-TAILED DEER

Tristan Swartout[1], Chad Newbolt[1], Todd Steury[1], and Stephen S. Ditchkoff[1]

[1] Auburn University

ABSTRACT:

Age of parents at time of breeding is increasingly documented to have effects on life history of offspring. While more commonly observed in biparental care systems, recent evidence has documented parental age effects in long-lived polygynous mammals such as bighorn sheep (*Ovis canadensis*). However, further research is warranted to improve our understanding of age-related patterns in large mammals. Using a long-term dataset on white-tailed deer, we examined the effects of both maternal and paternal age on life history traits in their respective offspring. Offspring traits of interest were annual recruitment success (ARS), lifetime recruitment success (LRS), lifespan (LS), and age at first recruitment event (AFR). We found that paternal age had a significant quadratic influence on offspring LRS based on sex of offspring ($P = 0.016$); where male offspring had a decrease in LRS with an increase in paternal age and female offspring had increasing LRS with increasing paternal age until paternal age reached approximately 4.5 years. Maternal age had a negative influence on offspring LRS ($P = 0.051$). Neither maternal nor paternal age affected offspring LS ($P > 0.523$) or AFR ($P > 0.244$). Offspring ARS was significantly influenced by maternal age in a quadratic relationship ($P < 0.03$) where offspring ARS increased with maternal age until approximately 4.5 years of age. Paternal age also had a significant quadratic relationship with offspring ARS but this was based on the sex of the offspring ($P = 0.019$). Specifically, male offspring showed reduced ARS with increasing paternal age until approximately 6 years, while female offspring showed increasing ARS with increasing paternal age until approximately 6 years of age. Overall, these results support growing evidence that advancing parental age has an effect on offspring life history. Specifically, these results suggest that advancing parental age negatively influences offspring fitness.

CONTACT: tjs0085@auburn.edu

NOTES:

EFFECT OF ANTLERLESS HARVEST STRATEGIES ON DEER HARVEST IN VIRGINIA

Elizabeth A. Hunter[1], W. Mark Ford[1], Justin Folks[2], Katherine Martin[2], Nelson Lafon[2]

[1]U.S. Geological Survey, Virginia Cooperative Fish and Wildlife Research Unit; Department of Fish and Wildlife Conservation, Virginia Tech
[2]Virginia Department of Wildlife Resources

ABSTRACT:

As hunting license sales decline, managers are tasked with controlling white-tailed deer (*Odocoileus virginianus*) populations through a limited number of tools. . We assessed several regulations designed to increase antlerless harvests in Virginia, 1994-2024. We hypothesized that “Earn-A-Buck” (EAB), which requires hunters to take an antlerless deer before harvesting a second antlered deer, would result in more harvested does, but effects would wane over time. We used a mixed effects multiple regression model in which the number of antlerless deer in each county (n=91) and year was a function of whether EAB was in effect, the number of hunting days, whether either-sex days were early or late or for the entire season, the total number of deer-relevant licenses sold, whether dog-hunting was permitted, and whether the county was being managed for chronic wasting disease (CWD). We included an interaction effect between EAB and year to test for a decline in effectiveness of EAB. We also modeled antlered deer harvests against these covariates. We found that EAB increased antlerless harvest substantially, but the effect declined slightly over time. EAB decreased the number of antlered deer harvested, which did not change over time. A greater number of either-sex days increased both antlerless and antlered harvest, although the effect was greater for antlerless. Inclusion in a CWD management area decreased harvest for both segments equally. Our results demonstrate that EAB and more either-sex days can be effective tools for increasing antlerless harvest.

CONTACT: ehunter1@vt.edu

NOTES:

*COYOTE BEHAVIOR NEGATES THE BENEFIT OF PREDATOR SWAMPING IN WHITE-TAILED DEER

Kevin T. Lovasik[1], K. Whitney Hansen[1], Miranda L. Hopper[1], Bryan D. Spencer[1], Randy W. DeYoung[1], Aaron M. Foley[1], J. Alfonso Ortega-Santos[1], David G. Hewitt[1], Landon R. Schofield[2], Tyler A. Campbell[2], John M. Tomeček[3], Michael J. Cherry[1]

[1]Caesar Kleberg Wildlife Research Institute
[2]East Foundation
[3]Department of Rangeland, Wildlife and Fisheries Management, Texas A&M University

ABSTRACT:

The predator swamping hypothesis suggests prey synchronizing birth events as a defense strategy to minimize predation of offspring. However, support for the hypothesis has been varied and a lack of a protective benefit of birth synchrony may be a function of predator behavior. We tested the predator swamping hypothesis in white-tailed deer and the effects of the spatiotemporal availability of neonatal deer on coyote (*Canis latrans*) resource selection in South Texas, USA, where coyotes are the primary predator of deer. We predicted deer born during the peak of parturition would benefit from predator swamping and would have reduced mortality risk. We predicted the benefits of swamping would be minimized by changes in coyote behavior when neonatal deer were most available. We modeled temporal variation in relative abundance of neonates using timing of birth and death of 92 neonates monitored during 2020-2023. We used Cox-proportional hazard models to understand how the relative abundance of neonates influenced neonate mortality risk. We monitored 137 coyotes with GPS collars during 2018-2022 and fit an integrated step selection function to test how the temporal variation in abundance of neonates influenced resource selection of resident and nonresident coyotes. We modeled 'fawning areas' using resource selection functions from GPS collar data of 61 adult female deer. We found no support for the predator swamping hypothesis. However, we found as the relative abundance of white-tailed deer neonates increased, resident coyotes increased selection for fawning areas. Our results suggest coyote behavior may negate the benefits of predator swamping.

CONTACT: kevin.lovasik@students.tamuk.edu

NOTES:

*TEMPORAL VARIATION IN SOLUBLE SUGAR CONTENT (BRIX) OF WHITE-TAILED DEER FORAGE

Nickolas Walton Jr.[1], Luke Resop[1], Eric Michel[1], Jacob Dykes[1]

[1]Mississippi State University

ABSTRACT:

White-tailed deer require high-quality plants to meet their nutritional demands. Brix (°Bx) levels measure the water-soluble content including sugar in plants and are often directly correlated with plant quality; however, little is known about how °Bx fluctuates throughout a 24-hr period. To evaluate changes in °Bx we planted three cool-season forages: crimson clover (*Trifolium incarnatum*), rapeseed (*Brassica napus*), wheat (*Triticum aestivum*) and three warm-season forages: common ragweed (*Ambrosia artemisiifolia*), partridge pea (*Chamaecrista fasciculata*), perplexed tick-trefoil (*Desmodium perplexum*) in a greenhouse during their typical growing periods. We potted 12 seedlings of each species and assigned three pots to each of four sampling periods. We sampled a group of three pots at 00:00, 06:00, 12:00, and 18:00 for eight weeks. Group one was sampled on week one and five, group two on week two and six, and so on. During each sampling event, we measured mean °Bx of leaf and growing tip tissue with a digital refractometer. °Bx of all species peaked at 18:00 and was lowest at 06:00. Common ragweed had the greatest average 18:00 measurement (6.75 °Bx) among the warm-season forages, and wheat had the greatest average 18:00 measurement (7.20 °Bx) among cool-season forages. The correlation between °Bx levels and crepuscular periods may help explain the crepuscular activity of white-tailed deer. We plan to continue this research in the field, evaluate deer selection relative to °Bx, and correlate °Bx with other plant nutrients.

CONTACT: nmw200@msstate.edu

NOTES:

*FIRE RESIDENCE TIME AND TEMPERATURE AFFECT HARDWOOD TREE MORTALITY WITHIN FIRE SEASON AND TREE SPECIES

William T. Fowler[1], Luke M. Resop[1], Steve Demarais[1], Bronson Strickland[1], Raymond B. Iglay[1]

[1]Department of Wildlife, Fisheries, and Aquaculture, Mississippi State University

ABSTRACT:

Lack of prescribed fire and other disturbances encourages hardwood encroachment into early seral plant communities and timber stands throughout the Southeast. Many land managers use prescribed fire to encourage plant communities favorable for white-tailed deer, but mechanistic relationships among fire season, fire behavior, and hardwood tree survival are not well understood. We designed an experiment to quantify these interactions by randomly assigning temperature (140−1475°F) and residence time (5−300 seconds) treatments to red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), and winged elm (*Ulmus alata*) trees with root collar diameters (RCD) ≤ 6 inches. We conducted fire treatments during three seasons: Dormant (February), Early Growing (May-June), and Late Growing (September-October) using semi-circle propane burners manufactured from flexible copper tubing positioned on both sides of the tree. We manipulated fire temperature through flame height and burner distance from each tree. Early Growing had the greatest tree mortality (0.12, 95% CI [0.08, 0.18]) compared to Dormant (0.03, 95% CI [0.02, 0.04]) and Late Growing (0.07, 95% CI [0.04, 0.12]) one year following treatment. By two years following treatment, tree mortality was similar among seasons, regardless of species, but sweetgum was more readily killed at smaller RCD (≤ 3 inches) and higher maximum temperatures (≥ 800°F) four inches from the ground two years after Dormant fire. Regardless of temperature, an increase in residence time produced increased topkill and mortality rates during all seasons and within all species. Land managers can use these findings to develop comprehensive burn prescriptions for reducing hardwood encroachment with prescribed fire.

CONTACT: wtf58@msstate.edu

NOTES:

ASSESSING STATE WILDLIFE AGENCY COMMUNICATIONS REGARDING CHRONIC WASTING DISEASE AND POTENTIAL HUMAN HEALTH RISKS

Paige Palomaki[1], Marc Schwabenlander[2,3], Roxanne Larsen[4], Tiffany Wolf[2,5]

[1]School of Public Health, University of Minnesota
[2]Minnesota Center for Prion Research and Outreach, College of Veterinary Medicine, University of Minnesota
[3]Department of Veterinary and Biomedical Sciences, University of Minnesota
[4]Priogen Corp.
[5]Department of Veterinary Population Medicine, University of Minnesota

ABSTRACT:

Chronic wasting disease (CWD) is a prion disease affecting cervids, characterized by progressive brain damage, wasting, and death. Although no human infections have been confirmed, scientists consider the possibility uncertain and recommend precaution because other prion diseases have crossed species barriers. State wildlife agencies play a central role in managing cervid populations and serve as information sources for hunters, venison consumers, and the public regarding CWD. We evaluated how state wildlife agencies communicate information on human health risks from CWD on their publicly accessible websites. Data were collected in the summers of 2022 and 2025, and two independent reviewers assessed each state's materials. Evaluation included: (1) assigning a 0–4 categorical score reflecting the presence and clarity of human health risk information and whether links to public health agencies were provided; (2) counting the number of clicks required to access this information; (3) comparing changes in each state's communication score from 2022 to 2025; and (4) comparing information provided by states with and without documented CWD in wild cervids. We found that CWD-positive states more frequently offered clear human health risk information than CWD-negative states. Information was typically accessible within 0–1 clicks for both CWD-positive and CWD-negative states. Overall trends were stable from 2022 to 2025, although states detecting CWD for the first time after 2022 were more likely to improve in communication scores (50%) than regress (33%) or remain unchanged (17%). These findings indicate opportunities for state agencies to strengthen communication about potential human health risks associated with CWD.

CONTACT: schwa239@umn.edu

NOTES:

*WHITE-TAILED DEER ANATOMICAL PHOTOLUMINESCENCE

Daniel R. DeRose-Broeckert[1], Billy R. Hammond[2], Steven B. Castleberry[1], and Gino J. D'Angelo[1]

[1]Warnell School of Forestry and Natural Resources, University of Georgia
[2]Vision Sciences Laboratory, Department of Psychology, University of Georgia

ABSTRACT:

Ultraviolet (UV) induced photoluminescence (PL) has been documented in a growing number of crepuscular and nocturnal mammals. Theories pertaining to PL biological function include Batesian mimicry, cryptic communication, and camouflage. These functions, however, remain hypothetical and taxon-specific because they are based on observational studies that described results qualitatively when assignment of biological function to PL requires quantitative analysis. White-tailed deer (hereafter; deer) are crepuscular species adapted to low-light conditions, including increased visual sensitivity to UV and near-UV wavelengths which predominate during crepuscular hours. Here, we report the first investigation of deer PL and describe the results using a quantitative analysis. We collected seven external glands, tail, and pelage of 48 deer from February 2024 - March 2025. We analyzed spectra elicited by exposure of specimens to 365 and 410 nm UV light. We compared the spectra of all specimens across season, age, and sex to deer forerib pelage to quantify visual contrast and life history effects on PL using quantitative spectroscopy. Deer interdigital, metatarsal, preputial, mammary, tarsal glands, and tails exhibited PL that significantly contrasted deer pelage ($P<0.001$), and deer PL exhibited significant seasonal changes ($P<0.001$). Based on known deer and predator visual physiology, the PL emitted by these tissues is predicted to be visible other deer and some predators. This research is the first quantitative description of anatomical PL in Mammalia that incorporates life history covariates, suggesting functional roles, and providing new insights into deer conspecific communication and perception.

CONTACT: dd13873@uga.edu

NOTES:

*DEER, DRIVERS, AND DATA: SPATIAL AND TEMPORAL PATTERNS BEHIND DEER-VEHICLE COLLISIONS AND HARVEST

Conner T. Mills[1], Robert A. Gitzen[1], Stephen S. Ditchkoff[1]

[1]Auburn University

ABSTRACT:

Across the Southeast, the most common long-term method of monitoring white-tailed deer by state agencies involves hunter-reported harvest data. However, deer-vehicle collisions (DVCs) represent another data type available over large spatial scales, and these DVC data may provide an additional index of deer abundance, especially in areas where hunting may be restricted. In Alabama, statewide trends show that the human population, deer harvest, hunter effort, and DVCs are all on the rise over the last decade. These parallels allow us to examine how DVC patterns vary spatially and temporally compared to deer harvest. To visualize these relationships, we mapped county-level shifts in human density, harvest density, and DVCs from 2014 to 2023. Mixed-effect models and covariate matrices were used to analyze DVC trends across space and time, while evaluating how those patterns relate to human density and deer harvest. Preliminary results suggest that raw DVCs are increasing annually, while standardized metrics (per human capita and per road miles) remain relatively flat. At the county level, human density and road miles were strongly correlated with DVCs. Statewide harvest per hunter day demonstrated a weak ($P = 0.061$) annual increase. We plan to evaluate county-level standardized harvest to properly identify how harvest by hunter effort compares with the spatial and temporal structure of standardized DVC metrics. Future analysis should incorporate multi-year land cover data, traffic patterns, and collision timing to further understand the mechanisms driving Alabama DVC risk.

CONTACT: ctm0092@auburn.edu

NOTES:

NET SCORE VERSUS GROSS SCORE: WHY THE BOONE AND CROCKETT SCORING SYSTEM SHOULD COUNT ALL THOSE POINTS.

W. Matt Knox[1], Ryan Toby[2]

[1]Deer Project Coordinator (Retired) Virginia Department of Wildlife Resources
[2]McAlester Army Ammunition Plant

ABSTRACT:

White-tailed deer (*Odocoileus virginianus*) antler characteristics, such as main beam length, main beam circumference, inside spread, number of antler points, and gross and net Boone and Crockett (B&C) scores have all been documented to exhibit predictable age growth patterns, to be strongly correlated, and to be reliable indicators of animal health or condition as indicated by body weight. Additionally, antler symmetry has also been reported to be correlated with deer age and condition. For this evaluation, dressed carcass weight and antler data from 1,319 antlered bucks killed on traditional public archery hunts on the McAlester Army Ammunition Plant (MCAAP) in Oklahoma, USA between 2005 and 2024 was utilized to determine if antler symmetry, as defined by the B&C scoring system, was related to deer condition; and, if so, to determine which B&C score, net or gross, is the better predictor of condition. We found that B&C's definition of symmetry is a weak predictor of condition and is primarily related to greater asymmetry among yearling bucks. The data also suggest that the B&C gross score is a better predictor of condition than the B&C net score. Lastly, the data suggest that scoring deer with nontypical points as nontypicals or gross nontypicals is a better predictor of deer condition than scoring them as a typical. These results indicate that the gross score based on the total inches of antler growth, both typical and nontypical, with no deductions for symmetry, is a better predictor of animal condition than the antler score with the B&C symmetry deductions. In other words, the B&C scoring system should count all those points.

CONTACT: wmattknox@aol.com

NOTES:

*DEER AND PREDATOR RESPONSE TO SEASONAL BURNING DURING FAWNING SEASON

Thomas Rovery[1], Spencer Marshall[1], Jacob Bones[1], Marcus Lashley[2], Bronson Strickland[3], Craig Harper[1]

[1]University of Tennessee
[2]University of Florida
[3]Mississippi State University

ABSTRACT:

Land managers use fire to enhance deer habitat in pine woodlands. Most burning occurs during the dormant season, but burning during the growing season may differentially affect resources for deer. There is limited information on how burning during different seasons influences deer use. We established nine sites to investigate fire seasonality effects on relative use by deer and coyotes (*Canis latrans*). Fire treatments included dormant (DOS), early (EGS), mid- (MGS), and late growing-season (LGS) fire with an unburned control. We implemented treatments three times on a two-year interval. We used camera traps to monitor deer and coyote use during the fawning season (May–September), 2021–2025. In the years we implemented fire treatments, fawn detections were on average 0.23 times less in the DOS and EGS treatments compared to control ($p<0.05$). Coyote detections were on average 1.87 times greater in the DOS, EGS, and MGS treatments compared to control ($p<0.05$). Fawn and coyote detections did not differ among treatments in years where fire was not implemented. Greater visual obstruction <6 feet above the ground increased fawn detections and decreased coyote detections ($p<0.05$). Fawns were 3.6 times more likely to be detected vigilant or running in EGS and DOS compared to control ($p<0.05$). Females are more likely to avoid recently-burned treatments because there is limited cover for fawns, but the sprouting plants after fire increase nutrient availability. Burning during different seasons provides more resources and may differentially affect deer and predator use during critical periods such as the fawning season.

CONTACT: trovery@vols.utk.edu

NOTES:

*CALF SURVIVAL AND VAGINAL IMPLANT TRANSMITTER SUCCESS IN MARYLAND SIKA DEER

Andrew Slear[1], Matthew McBride[1], Elizabeth Tymkiw[1], Angela Holland[1], Jonathan Trudeau[2], Jacob Bowman[1]

[1]University of Delaware
[2]Maryland Department of Natural Resources

ABSTRACT:

Sika deer (Cervus nippon yakushimae) are an important non-native game species in Maryland. Management to meet annual sika deer harvest demand while minimizing conflict with native species and agricultural producers is vital. Objectives of this study include documenting cause-specific calf mortality, calf survival rates, and documenting Vaginal Implant Transmitter (VIT) success. VITs are a winged implant designed to stay in the vaginal canal until birth and indicate accurate birthing time and location of ungulate species. We captured adult females (hinds) from 2022-2025 using drop nets, rocket nets and clover traps to deploy VITs and GPS/VHF collars. We used the location of the expelled VIT to find and collar neonates. We monitored calves for 90 days or until a mortality event occurred to determine cause-specific mortality and estimate survival rates. From 2022-2025, we deployed 76 hind collars/VITs which resulted in 52 parturition events. We documented 17 mortalities, 14 of which are included in the survival analysis. Mortality causes included drowning, bacterial infection, stillbirth, predation and hunter harvest. We calculated VIT success based on neonates located. Throughout the study, we made several adjustments to the VIT design to reduce premature expulsions. This is the first study to successfully use VITs as a research tool in Maryland's sika deer population. This study will help managers understand population trends, recruitment, and habitat use to ensure a healthy population and sustainable hunter harvest.

CONTACT: slearac@udel.edu

NOTES:

MANAGEMENT SCALE AND INTENSITY LIMIT FORAGE AVAILABILITY ON PROPERTIES MANAGED FOR DEER

Mark A. Turner[1], Craig Harper[2], Bronson Strickland[3], Marcus Lashley[4]

[1]Oklahoma State University
[2]School of Natural Resources, University of Tennessee
[3]Department of Wildlife, Fisheries and Aquaculture, Mississippi State University
[4]Department of Wildlife Ecology and Conservation, University of Florida

ABSTRACT:

White-tailed deer habitat management generally focuses on increasing high-quality forage availability to improve body condition and promote larger morphology, but existing forage availability on properties managed for deer is relatively unknown. We sampled selected deer forages on 43 properties across 25 states to evaluate forage biomass and nutritional carrying capacity using 14% crude protein and 0.3% phosphorus constraints across vegetation types on each property. We also considered scenarios where the scale and intensity of management were increased to evaluate how improved management could increase forage. Forage availability generally was limited on most properties with the greatest forage availability provided by row crops, food plots, and early succession. Closed-canopy hardwood forest and pasture/hay provided the least forage, with extensive coverage of closed-canopy forests the primary limitation for nutrition on most sites. Additionally, forage estimates in open vegetation types were less than those reported in the literature, and scenarios where forage production in those vegetation types was increased to correspond with values reported in the literature led to large increases in property-wide nutrient availability. Even on properties where deer management is a primary objective, our results indicate that most provide relatively poor nutrient availability compared to what is possible with more intensive management. Managers interested in increasing forage availability and resulting morphometrics should evaluate available nutrients in the major vegetation types on their property and not only consider more intensive management, but also implementing management at a greater scale by converting more forest into open woodland and early succession.

CONTACT: mark.a.turner@okstate.edu

NOTES:

*SERUM AND HAIR CORTISOL CONCENTRATIONS IN WHITE-TAILED DEER FROM A HIGH PREVALENCE CWD AREA

Cameron Mitchell[1], Jacob Wyrick[1], Justin Kosiewska[1], Mark Wilber[1], Daniel Grove[1], Dailee Metts[1], Lisa Muller[1]

[1]University of Tennessee

ABSTRACT

Many clinical signs of chronic wasting disease (CWD) in white-tailed deer are consistent with those of chronic stress including hyperexcitability, head tremors, teeth grinding, pacing, excessive salivation, drinking, and urination. Deer with CWD+ status are more likely to die and exhibit poor body condition and clinical signs may be exacerbated by chronic stress. Chronic stress may inhibit the ability to fight secondary infections. Therefore, it is important to evaluate hormones linked to stress, such as cortisol, and their relationship with CWD status. We measured cortisol concentrations using an ELISA assay in serum from nine captured deer that died within 30 days and were tested for CWD in a companion study. We also tested cortisol in hair from hunter harvested deer which were tested for CWD at harvest. Serum cortisol represents stress during capture and is highly variable by individual. In contrast, cortisol in hair is more representative of long-term concentrations. Although not significant, serum cortisol was higher in CWD+ (mean = 5.9 ug/dl, SE = 1.6) compared to CWD- deer (mean = 2.9 ug/dl, SE = 1.3). In hair, cortisol concentrations were significantly higher in CWD+ animals (P = 0.03). Cortisol concentrations in the hair of CWD+ deer were 1.3 pg/mg hair, (SE = 0.24) and for CWD- were 0.79 pg/mg, (SE = 0.09). These results indicate chronic stress may facilitate the adverse effects of CWD and make deer more susceptible to other sources of mortality. Adverse effects of deer capture may also be affected by CWD status.

CONTACT: cmitch48@vols.utk.edu

NOTES:

*DEER RESPONSE TO LARGE-SCALE WILDFIRE VARIES BY FIRE INTENSITY

Ret Tanner[1], Mark Turner[1], Olivia Prichard[1], Ryan Desantis[1], M. Colter Chitwood[1]

[1]Oklahoma State University

ABSTRACT:

Understory conditions strongly influence white-tailed deer resource availability. Several studies have investigated methods to improve deer resource availability, including canopy reduction and prescribed fire. Intense wildfire can also promote understory vegetation that serves as cover and forage following extensive overstory tree mortality. However, there is limited information on how deer respond to vegetation following a large-scale wildfire. In March 2025, a wildfire burned 26,000 acres near Stillwater, Oklahoma. Much of the fire occurred in post oak (*Quercus stellata*) and blackjack oak (*Quercus marilandica*) -dominated forests of the Cross Timbers ecoregion, with variable stem densities of eastern redcedar (*Juniperus virginiana*). Our objectives were to monitor vegetation during the growing season following the fire and evaluate factors that influence deer use. We measured vegetation composition, understory structure, overstory mortality, and deer use of areas burned with varying intensity in July–September 2025. Despite limited herbaceous vegetation prior to the wildfire, forb coverage averaged 57% and grass coverage averaged 40% coverage within 5 months of the fire. Deer detections increased in areas with denser vegetation below 1.6-ft (p=0.04), which was associated with greater overstory tree mortality (p = 0.04). Our results indicate post-fire tree mortality promoted the growth of understory vegetation that likely contributed to increased use of burned areas. Despite nearly complete overstory mortality in some areas, particularly forest stands with extensive eastern redcedar encroachment, deer readily used areas burned within a few months. Our monitoring following wildfire demonstrates that deer respond to fine-scale vegetation conditions even following a large-scale disturbance event.

CONTACT: ray.e.tanner@okstate.edu

NOTES:

*COMPARISON OF REGENERATIVE AND CONVENTIONAL TECHNIQUES FOR DEER FOOD PLOTS

Luke Resop[1], Bronson Strickland[1], Craig Harper[2], Eric Michel[1], Jacob Dykes[1], Steve Demarais[1]

[1]Mississippi State University
[2]University of Tennessee

ABSTRACT:

Southeastern deer managers spend approximately $229 million on food plots and plant 1.2 million acres annually. Up to 95% of food plot practitioners are interested in regenerative management techniques but only 42% currently implement them. Some managers claim regenerative practices increase soil health, plant nutrition, and deer selection, but such claims have little scientific foundation. We implented side-by-side conventional (CONV) and regenerative (REGN1 and REGN2) food plots on nine study sites for comparison. CONV included tillage, synthetic soil amendments, herbicide, and low-diversity seed blends. Both regenerative treatments excluded tillage and soil amendments and included high-diversity seed blends to rejuvinate soil biology. REGN1 exluded all herbicides and REGN2 included limited herbicides. We evaluated how regenerative and conventional practices influenced soil health, plant growth and nutrition, deer selection, and cost. After two years of treatments, soil organic matter was similar among treatments (CONV: 3.0%; REGN1: 3.1%; REGN2: 3.2%). Forage crude protein was greater in CONV (25.7%) relative to the same species in REGN1 (19.5%) and REGN2 (21.1%). CONV produced more forage (lb/ac; 718) than REGN1 (249) and REGN2 (557). CONV produced less weeds (lb/ac; 737) than REGN1 (1,683) and REGN2 (1,442). Deer spent more time in CONV (camera detections/ac/day; 368) than REGN1 (163) and REGN2 (233). CONV cost more ($1,159) to manage annually per acre than REGN1 ($336) and REGN2 ($353) and produced similar forage biomass per dollar (lb; CONV: 0.95; REGN1: 0.77; REGN2: 1.67). We recommend conventional food plot management when forage biomass, nutrition, and deer use are primary objectives.

CONTACT: lr1177@msstate.edu

NOTES:

EVALUATION OF INTENSIVE MANAGEMENT FOR ANTLER SIZE IN WHITE-TAILED DEER

Randy W. DeYoung[1], Cole C. Anderson[1], Michael J. Cherry[1], E. Ann Staiger[2], David G. Hewitt[1], Charles A. DeYoung[1], Joseph A. Hediger[1], Matthew T. Moore[3], and Stuart W. Stedman[3]

[1]Caesar Kleberg Wildlife Research Institute, Texas A&M University-Kingsville
[2]Department of Animal Science and Veterinary Technology, Texas A&M University-Kingsville
[3]Faith Ranch

ABSTRACT:

Intensive management of deer has become increasingly popular. The Texas Parks and Wildlife Department's Deer Management Permit (DMP) authorization was established in 1998, allowing managers to temporarily confine a small population of whitetails through the fawn-rearing season. Typically, DMP enclosures are stocked with 1 large-antlered buck and 15 to 20 adult does. All individuals must be released by early autumn. Although DMP have been widely used, there has been no formal evaluation of the practice. We analyzed bucks produced in 2 DMP enclosures in South Texas, USA, during 2007–2023; 14 bucks produced sons that reached maturity (≥ 5.5 years old). We recorded 2,638 antler measurements from 521 bucks and evaluated genetic and environmental effects on antler size. Heritability for antler traits was low in young bucks and low to moderate in adult bucks. Antler size in young bucks was influenced more by environmental conditions than genetics, whereas most antler traits in older deer would respond to selection. Bucks born in DMP enclosures averaged 10 Boone & Crockett inches larger than the population average at maturity. Release of DMP-born bucks into a 1,100-ac game-fenced pasture did not increase average antler size in the population. This was probably due to lack of control in breeding, long generation intervals, and moderate heritability of antler traits. The DMP enclosures can produce above-average individual bucks but may not have a population-level effect. The results of this study will help landowners, managers, and legislatures make science-based decisions about intensive management for antler size in populations of wild cervids.

CONTACT: Randall.DeYoung@tamuk.edu

NOTES:

*INFLUENCES OF URBANIZATION ON SURVIVAL AND CAUSE-SPECIFIC MORTALITY OF WHITE-TAILED DEER

Mikiah Carver-McGinn[1], Christopher Moorman[2], John Kilgo[3], Nils Peterson[2], Elizabeth Kierepka[4], Jared Lamb[1], April Boggs Pope[5], Heather Evans[5], Jonathan Shaw[5], Nathan J. Hostetter[6]

[1]North Carolina Cooperative Fish and Wildlife Research Unit, Department of Applied Ecology, North Carolina State University
[2]Fisheries, Wildlife, and Conservation Biology Program, North Carolina State University
[3]USDA Forest Service Southern Research Station
[4]NC Museum of Natural Sciences, Department of Forestry and Environmental Resources, North Carolina State University
[5]North Carolina Wildlife Resources Commission
[6]U.S. Geological Survey, North Carolina Cooperative Fish and Wildlife Research Unit, Department of Applied Ecology, North Carolina State University

ABSTRACT:

Landscape changes associated with urbanization can influence survival by altering the relative probability of different causes of mortality. Urbanization can elevate certain risks (e.g., vehicle collisions) while reducing others (e.g., hunter harvest), creating complex patterns in survival along urbanization gradients. We analyzed data from 198 GPS-collared white-tailed deer (111 females, 87 males) monitored from 2022-2025 across an urbanization gradient in Durham and Orange counties, North Carolina. Using a Bayesian known-fate survival model, we estimated weekly and annual survival and cause-specific mortality in relation to urbanization, sex, age, weekly movement, dispersal events, and season. Mortality sources significantly shifted across the gradient; however, declines in hunter harvest in more urban areas were balanced by increases in vehicle collisions, resulting in no significant differences in annual survival across the gradient. Weekly survival was lower during the harvest season than during the non-harvest season. Although weekly movement did not influence survival, yearling males had lower weekly survival during dispersal. Adult male annual survival ranged from 0.45-0.42 along the rural-to-urban gradient, whereas adult female survival ranged from 0.77-0.81. Our results show how urbanization alters the mechanisms driving mortality, revealing an outcome where substantial changes in multiple mortality sources did not lead to significant changes in survival across the gradient. Because hunter harvest was low in urban areas, reducing vehicle collisions in rapidly urbanizing regions will likely require prioritizing alternative management strategies, including non-lethal approaches (e.g., reduced speed limits) or targeted increases in lethal removals (e.g., urban archery).

CONTACT: mcarver@ncsu.edu

NOTES:

MAPPING THE WHITETAIL RUT IN THE UNITED STATES

Brian P. Murphy[1], Matt Roe[1]

[1]HuntStand

ABSTRACT:

Peak conception in white-tailed deer (*Odocoileus virginianus*) varies considerably throughout its range to maximize fawn survival relative to local environmental conditions. Commonly referred to as the rut, this period of increased movement and heightened sexual activity has significant implications for hunting and management yet had never been fully mapped across the United States. In 2022, we obtained breeding data from 43 state wildlife agencies to create the first nationwide whitetail rut map. We defined peak rut as the two-week period during which most females conceive. Several data sources were utilized, with fetal data being used whenever possible. Peak rut dates were obtained for 4,240 counties or parishes, representing approximately 98% of the whitetail's range in the United States. We documented 210 days between the earliest and latest rut periods, with ruts occurring in eight calendar months, likely representing the greatest variation in breeding dates for any native cervid in North America. We divided the 210-day overall rut period into three 70-day periods defined as Early Rut, Traditional Rut, and Late Rut. This revealed 3% of counties with an Early Rut, 79% with a Traditional Rut, and 7% with a Late Rut. There are only four states in which a hunter can hunt the Early Rut and only seven where Late-Rut hunting opportunities are available. However, hunters can experience a Traditional Rut in all 43 states. We discuss hunting, management and economic implications of this wide range of conception dates.

CONTACT: bmurphywtd@gmail.com

NOTES:

ENVIRONMENTAL DETECTION OF CHRONIC WASTING DISEASE PRIONS IN DUST: IMPLICATIONS FOR SURVEILLANCE AND BIOSECURITY

Marc D. Schwabenlander[1,2], Gage Rowden[1,2], Lauren Wolfrath[1], Nicole Lurndahl[1,2], Qi Yuan[3], Diana Karwan[1,4], Jason Bartz[3], Tiffany Wolf[1,5], Peter A. Larsen[1,2]

[1]Minnesota Center for Prion Research and Outreach, College of Veterinary Medicine, University of Minnesota
[2]Department of Veterinary and Biomedical Sciences, University of Minnesota
[3]Department of Medical Microbiology and Immunology, Creighton University
[4]Department of Forest Resources, University of Minnesota
[5]Department of Veterinary Population Medicine, University of Minnesota

ABSTRACT:

Chronic wasting disease (CWD) prions (PrP^{Sc}) persist in the environment for years, complicating disease management in cervid populations. This long-term stability, however, creates opportunities for environmental surveillance. Recent advances in real-time quaking-induced conversion (RT-QuIC) assay enable sensitive detection of prions in complex environmental matrices. Building on prior Scrapie evidence, we hypothesized that CWD prions bind to dust particles that accumulate on surfaces, providing a tractable target for field-based detection and enhancing the potential for fomite-induced disease spread. We evaluated PrP^{Sc} recovery from surface swabs collected from (1) personal protective equipment (PPE; rubber boots, Tyvek) worn during visits to prion-contaminated areas (CWD prion detection in carcasses/soil), and (2) stainless-steel plates deployed in CWD-contaminated and uncontaminated areas. PPE trials involved hiking in confirmed contaminated and uncontaminated sites, with swabs collected pre-sampling, post-sampling, and post-decontamination. RT-QuIC results showed significant differences between swabs from contaminated versus uncontaminated sites, between pre- and post-sampling, between post-sampling and post-decontamination, and between Tyvek and boots, indicating that dust-associated CWD prions adhere to field gear. We placed steel plates in contaminated and uncontaminated areas and sampled before deployment and after 1–4 years of exposure. Prions were not detected on plates from uncontaminated sites. In contrast, statistically significant RT-QuIC activity was detected on plates from locations containing relatively high levels of CWD prion detection in carcasses and soil. These findings suggest that 1) CWD PrP^{Sc} can accumulate on dust-coated surfaces, 2) surface swabbing can be employed for environmental CWD surveillance, and 3) surface decontamination should be implemented for biosecurity.

CONTACT: plarsen@umn.edu

NOTES:

CLOSING THE DATA ANALYSIS GAP: UTILIZING DEPTH-AWARE AI TO ACHIEVE RAPID, VERIFIABLE MANAGEMENT PRACTICES IN AN EVOLVING WORLD

Joseph Porter[1], Tanner Metzmeier[1]

[1]Vale, Inc.

ABSTRACT:

Wildlife management is facing a technological tipping point. Trail cameras and field sensors now capture enormous volumes of visual data, but this surge has outpaced our ability to extract meaningful insight. Agencies routinely confront millions of images and hundreds of hours of video that must be processed by limited and frequently changing staff. Existing AI tools help only marginally, offering shallow filtering rather than deep, decision-grade analysis. The core issue is that most camera hardware was never built for AI-native workflows, leaving today's systems unable to generate the depth, precision, and contextual information required for modern wildlife management.

To address this growing gap, we developed and evaluated a depth-enabled AI method for automated distance sampling to estimate white-tailed deer populations. Twenty-seven off-the-shelf trail cameras were deployed across 3,000 acres at non-baited sites. Each site was scanned with high-density LiDAR to calibrate a depth-aware model capable of automatically generating viewshed areas and radial distance measurements to animals within the scene. Once deployed, a user needs only to set a camera and record a single known-distance reference point before uploading data, enabling rapid and consistent analysis without prolonged manual review. Because the approach relies on ubiquitous consumer trail cameras, it can scale directly to the public. With hunters purchasing millions of cameras each year, collaboration between agencies and outdoor technology companies could transform this widespread hardware into a powerful, low-friction data collection network. By aligning AI-native analysis with public participation, we can bridge the data overload gap and strengthen deer management for the challenges ahead.

CONTACT: joseph@vale.vision

NOTES:

NATIONAL TRENDS IN ANTLERLESS-ONLY HUNTING OPPORTUNITIES AND ANTLERLESS HARVEST PREFERENCE RELATIVE TO ANTLERED HARVEST

Ben Westfall[1], Kip Adams[1], Nick Pinizzotto[1], Matt Ross[1]

[1]National Deer Association

ABSTRACT:

Despite widespread awareness of the importance of antlerless harvest, many hunters and state wildlife agencies struggle to meet harvest goals and maintain deer populations in balance with the habitat. We surveyed state wildlife agencies to determine whether their jurisdiction offered any antlerless-only hunting opportunities and if so, which month(s) they occurred. We also asked whether they preferred the annual antlerless harvest to be greater than, about equal to, or less than the antlered deer harvest and compared that to 2018 data. Twenty-six states offer antlerless-only hunting opportunities at some point during the hunting season or in certain management units, ranging from August through the following March. As the national buck harvest continues to exceed the antlerless harvest annually, 23 of 43 (53%) states indicate a preference that the antlerless harvest be greater than the antlered buck harvest; a noteworthy increase from 13 states in 2018. Additionally, four states prefer it equal, and 14 states prefer a higher buck harvest. Half of the states that prefer higher buck harvests are in the West, likely due to agency goals of increasing or maintaining white-tailed deer populations. Three states in the Northeast, two in the Southeast and one in the Midwest prefer a greater buck harvest. Appropriate antlerless harvests can make or break deer management programs, and it varies across any state. Our results shed light on the importance of adequate antlerless harvest in areas where reducing deer density, balancing sex ratios, and mitigating the spread of disease are among agency objectives.

CONTACT: ben@deerassociation.com

NOTES:

NEW WORLD SCREWWORM: STATUS UPDATE AND IMPLICATIONS FOR WHITE-TAILED DEER

Blaise Korzekwa, Texas Parks & Wildlife Department

ABSTRACT:

New World screwworms (NWS) are parasitic flies (*Cochliomyia hominivorax*) that lay eggs in open wounds and mucous membranes, such as those located in the nostrils, eyes or mouths of live warm-blooded animals. After hatching, larvae burrow into wounds and feed on living tissue causing further infection, known as myiasis, which can result in severe health decline and death. Originally eradicated from the U.S. in 1966, impacts from NWS have been limited to isolated outbreaks in 1976 in Texas and more recently in 2016 in Florida. Recent northward movement of NWS through Central America and Mexico has caused significant concern for Texas' livestock industry and wildlife populations. The Texas Parks & Wildlife Department, along with other state and federal agencies, stakeholder groups, and industry partners have focused on response efforts and management strategies to combat a potential NWS infestation. White-tailed deer management and hunting contribute an estimated $9.6 billion to the Texas economy every year. Coupled with the economic contribution of livestock, NWS infestations could have severe implications to not only livestock and wildlife populations, but also Texas' economy.

CONTACT: blaise.korzekwa@tpwd.texas.gov

NOTES:

THIRTY YEARS OF SUCCESS: SCDNR UPSTATE MOBILITY IMPAIRED DEER HUNTS

Mark Carroll, Wildlife Biologist, South Carolina Department of Natural Resources

ABSTRACT:

In 1995, the South Carolina Department of Natural Resources (SCDNR) partnered with private landowners in the central Piedmont region to launch the Upstate Mobility Impaired Deer Hunt program. Led by Wildlife Biologist Gerald Moore, the initiative sought to connect mobility-impaired hunters with landowners willing to provide access and assistance for deer hunting opportunities. The inaugural event hosted just nine hunters with a single participating landowner. Despite early challenges in recruiting both hunters and landowners, the program has since expanded significantly and now offers annual hunting opportunities supported by more than forty private landowners. Today, SCDNR continues to promote and strengthen the program, ensuring that mobility-impaired individuals can return to the field and participate fully in South Carolina's hunting traditions.

CONTACT: carrollm@dnr.sc.gov

NOTES:

REGULATION OR EDUCATION: A MODERN APPROACH FOR DEER MANAGEMENT

Dallas Barber, Oklahoma Department of Wildlife Conservation

ABSTRACT:

With hunter priorities always shifting, Oklahoma has taken an approach towards deer management that puts an emphasis on hunter education instead of regulation. The primary objective is to educate hunters on deer management decisions that allow for both trophy management, and general opportunity to coexist. This communication is in the form of campaign efforts, and transparency with constituents. This has resulted in meeting antlerless harvest goals, and improvement of age structure of bucks at harvest.

CONTACT: dallas.barber@odwc.ok.gov

NOTES:

BALANCING BIOLOGY AND OPPORTUNITY: ANTLERLESS DEER HARVEST MANAGEMENT IN FLORIDA

Cory Morea, Becky Peters, Elina Garrison - Florida Fish and Wildlife Conservation Commission

ABSTRACT:

Antlerless deer harvest regulations have long been a central tool for managing white-tailed deer populations, although their implementation has varied considerably across time and among states in response to changing ecological conditions, hunter attitudes, and management objectives. Antlerless harvest policy in the Southeast has evolved substantially since the early to mid-20th century, reflecting shifts from population protection and recovery toward more active population regulation. In Florida, antlerless harvest has been approached conservatively due to the state's relatively low deer productivity and therefore limited capacity for rapid population recovery following even moderate harvest. This presentation reviews the historical development of antlerless deer harvest regulations in Florida, including changes in season frameworks, bag limits, management zones, and permit systems, and examines corresponding trends in reported antlerless harvest. We describe how antlerless harvest opportunities expanded spatially and temporally as deer populations increased, while remaining constrained in regions with lower productivity or distinct habitat limitations. We further discuss how sociopolitical factors, hunter acceptance, and regional biological considerations influence regulatory decisions. Understanding the historical context of antlerless harvest in Florida provides important insight into contemporary deer management challenges and highlights the role of adaptive regulation in balancing population objectives, hunter opportunity, and long-term sustainability.

CONTACT: cory.morea@myfwc.com

NOTES:

A RETROSPECTIVE LOOK AT CWD REGULATORY COMPLEXITY: BENEFIT OR HINDRANCE?

Adam C. Edge[1], Daniel M. Grove[2], Sonia M. Mongold[1], and Mark K. McBride[1]

[1]Tennessee Wildlife Resources Agency
[2]School of Natural Resources, University of Tennessee

ABSTRACT:

The discovery of chronic wasting disease (CWD) in Tennessee in 2018 led to the circumstantial creation of a standalone disease management unit by the Tennessee Wildlife Resources Agency. Unit CWD was originally composed of eight CWD-positive or high-risk counties with regulations tailored to limit wildlife feeding, restrict carcass transportation, and increase deer harvest as disease management strategies. As the known distribution of CWD expanded in the following years, the addition of new counties and increasingly liberal harvest regulations within the unit were commonplace. By 2023, Unit CWD included 12 counties with season lengths and/or harvest incentives changing every year since conception. Meanwhile, deer harvest within the original eight counties of Unit CWD reduced by 6.7% from 2018 to 2023, the agency faced adverse public response, and CWD continued to be detected in new counties. During the process of developing an updated regulatory framework for deer, public input implied that the complexity of CWD regulations acted as a barrier for hunters and liberalized harvest opportunities were negatively perceived. Thus, the regulatory response intended to proactively manage CWD potentially became a hindrance, resulting in diminished management effectiveness. To simplify regulations and reduce the stigma around a “diseased” area, Unit CWD was omitted in 2024. New deer management units were delineated within a standardized regulation structure. Additional harvest incentives still apply to CWD-positive counties, and a CWD Management Zone is in place to regulate carcass transport and feeding. With continued disease expansion, further discussion on long-term, sustainable CWD response is needed.

CONTACT: adam.c.edge@tn.gov

NOTES:

POSTER ABSTRACTS

*ASSESSING DIFFERENCES IN WHITE-TAILED DEER DENSITY BETWEEN PUBLIC AND PRIVATE LANDS

Parker D. Kreie[1], Tyler R. Obermoller[2], Dana J. Morin[1], Jacob L. Dykes[1], Eric S. Michel[1]

[1]Mississippi State University Department of Wildlife Fisheries and Aquaculture
[2]Minnesota Department of Natural Resources

ABSTRACT:

Density estimates are important when evaluating management efforts and setting harvest recommendations for white-tailed deer. Density estimates likely vary between public and private land due to differences in management practices and hunting pressure. The Minnesota Department of Natural Resources uses population modeling to estimate statewide deer density. However, model validation via aerial and road surveys is unfeasible in the northeastern region due to forest cover and reduced visibility to detect and count animals. Our objectives were to evaluate camera traps and the space-to-event estimator to assess deer density in northeastern Minnesota and compare estimates between public and private lands. We deployed 35 cameras in 2024 and 40 cameras in 2025 from mid-July to mid-September. Total deer density was about five deer per square mile (DPSM; 95% CI = 4.5 – 5.5; CV = 5.4%) in 2024. Deer density was greater on public land ($\bar{x}$ = 18 DPSM; CI = 14.8 – 21.5; CV = 9.7%) than on private land ($\bar{x}$ = 4 DPSM; CI = 3.4 – 4.3; CV = 6.4%) in 2024. Total deer density was about 18 DPSM (CI = 15.1 – 21.4; CV = 8.9%) in 2025. However, there was no difference in 2025 between public ($\bar{x}$ =15 DPSM; CI = 12.2 – 19.4; CV = 12.0%) and private ($\bar{x}$ = 23 DPSM; CI = 17.6 – 29.6; CV = 13.4%) lands. Consecutive mild winters may have contributed to increased deer density, but additional estimators are needed to assess the changes in density between 2024 and 2025.

CONTACT: pdk64@msstate.edu

NOTES:

*ESTABLISHING NORMAL COMPLETE BLOOD COUNT REFERENCE INTERVALS FOR WHITE-TAILED DEER USING A COMMON IN-CLINIC ANALYZER

Lila Stevens[1], Don Wagner[2], Justin Brown[1]

[1]Pennsylvania State University Department of Veterinary and Biomedical Sciences
[2]Pennsylvania State University Department of Animal Science

ABSTRACT:

Antemortem (i.e., live-animal) diagnostic tests are commonly used in veterinary medicine to evaluate the health and disease status of patients. In combination with a patient's history and clinical status, these tests facilitate health evaluations and, in some cases, early disease detection. However, antemortem tests are underutilized for evaluating the health of white-tailed deer due to challenges in sample collection, a lack of validated analyzers, and limited data on reference intervals. Currently, hematology data in deer are typically generated by manually counting cell type proportions on blood films. This method can be inaccurate due to the clinician's experience, sample quality, and the fact that hematology results are derived from a small sample of circulating cells. In-clinic analyzers are commonly employed in veterinary settings to produce CBC data for domesticated species. These analyzers are more accurate, consistent, and standardized than manual counts; however, few are validated for deer. In this research, we have developed "normal" CBC reference intervals for white-tailed deer using a common commercially available in-clinic analyzer (ProCyte Dx, IDEXX, Westbrook, ME). These data were generated on chemically immobilized captive white-tailed deer with known clinical histories that appeared outwardly healthy. These reference intervals can serve as a baseline for "normal" white-tailed deer CBC results, which can be compared to those from deer exhibiting overt disease. Additionally, these normal reference intervals are a valuable resource for deer researchers/managers who have access to this widely available analyzer. Future research will focus on characterizing CBC changes associated with common white-tailed deer diseases.

CONTACT: les5985@psu.edu

NOTES:

*COMPARATIVE ANALYSIS OF SURVEY METHODS FOR WHITE-TAILED DEER IN WESTERN KENTUCKY

Haley Taylor[1], Tommy Apostolopoulos[2], Joe McDermott[2], John J. Cox[1], Matthew Springer[1]

[1]University of Kentucky
[2]Kentucky Department of Fish and Wildlife

ABSTRACT:

Reliable and cost-efficient population monitoring remains a core goal for agencies responsible for managing white-tailed deer (*Odocoileus virginianus*). Traditional spotlight surveys using distance sampling are foundational and continue to be implemented, but the emerging tools such as thermal imaging offer potential benefits in detection and labor efficiency. In collaboration with the Kentucky Department of Fish and Wildlife Resources (KDFWR) and the University of Kentucky, we surveyed 23 road-based transects in western Kentucky to compare detection and cost metrics between spotlight distance sampling and truck-mounted thermal imagery. Spotlight surveys recorded 542 deer, while post-processed thermal surveys recorded 573 deer. Distance sampling analysis of spotlight survey data produced a density of 21.55 deer/mi² with detection probability (p) of 0.74. Thermal survey naïve density was 36.40 deer/mi² and 18.60 deer/mi² when using the given detection probability within the distance sampling line transect estimator. Unlike actively monitored thermal counts, post-processed thermal imagery reduced observer bias and required fewer personnel than other survey methods. Cost analysis showed that thermal imaging carried higher initial equipment costs but resulted in lower labor and operational costs per observation over time. These findings suggest that post-processed thermal surveys, paired with GIS-based viewshed modeling, can support efficient and valuable data collection, reducing long-term costs and staffing needs. Findings support agency evaluation of existing methods and provide a basis for expanding to additional or complementary survey tools. With continued investment, these methods could enable KDFWR and similar agencies to modernize survey protocols and increase monitoring capacity.

CONTACT: Haleye.taylor@uky.edu

NOTES:

*UNDERSTANDING THE DRIVERS OF DEER-VEHICLE COLLISIONS USING ECONOMETRIC AND MACHINE LEARNING MODELS IN SOUTH CAROLINA, U.S.A.

Sanjeev Sharma[1], Susan T. Guynn[2], Churamani Khanal[3], and Puskar Khanal[1]

[1]Department of Forestry and Environmental Conservation, Clemson University
[2]College of Agriculture, Forestry, and Life Sciences, Clemson University
[3]Department of Plant and Environmental Sciences, Clemson University

ABSTRACT:

Deer-vehicle collisions (DVCs) remain a major safety, ecological, and economic concern across the United States, causing thousands of injuries, hundreds of fatalities, and billions of dollars in damages each year. This study examined statewide factors influencing DVCs in South Carolina. We combined spatial datasets on land cover, wildlife harvest, roads, water, and fire history with collision records provided by the U.S. Department of Transportation. Results from negative binomial regression indicated that counties with higher hog and coyote harvests and larger water areas experienced more collisions. Spatial hotspot analysis showed that high-risk areas have shifted over time from coastal counties such as Horry, Marion, and Charleston in 2019 to upstate counties like Greenville and Spartanburg in 2023. Most collisions occurred near developed and cultivated lands and woody wetlands, particularly in October and during twilight hours (6–8 AM and 8–10 PM). Random Forest and Artificial Neural Network models produced accuracy scores of 0.67 and 0.66, identifying elevation, slope, and road type as the most influential predictors. These results demonstrate that both land-use and wildlife dynamics play significant roles in DVC patterns. The study provides the first statewide predictive framework for South Carolina, offering a foundation for improved planning, habitat management, and targeted mitigation strategies to reduce deer-related collisions.

CONTACT: sanjeev@clemson.edu

NOTES:

*MONITORING WHITE-TAILED DEER AND PREDATOR ACTIVITY IN CWD POSITIVE TENNESSEE THROUGH CAMERA TRAPS

Kaylie Hawthorne[1], Dailee Metts[1], Billy Gardner[1], Cameron Mitchell[1], Jacob Wyrick[1], Justin Kosiewska[1], Mark Wilber[1], Dan Grove[1], and Lisa Muller[1]

[1]University of Tennessee, Knoxville

ABSTRACT:

We examined predator-prey interactions at Ames Research and Education Center (AmesREC) in West Tennessee (Fayette and Hardeman County), an area with high chronic wasting disease (CWD) prevalence, via camera traps from January 2023 – January 2025. A companion survival study showed increased predator mortality on adult white-tailed deer (*Odocoileus virginianus*), prompting evaluation of deer-predator interactions at AmesREC. We deployed 22 cameras; sixteen at historical bait sites and six at random sites in proximity to bait sites. We classified 561,816 images with Wildlife Insights and confirmed species identification by visual observation. We ran a temporal overlap analysis between species using 24-hour photo timestamps measuring the “Dhat” coefficient. This estimates similarity of the area under two species’ activity density curves (0 = no overlap and 1 = complete overlap). We found deer activity significantly overlapped with bobcat (*Lynx rufus*) and coyote (*Canis latrans*) activity (0.824 and 0.838, respectively). However, peak deer activity at all sites preceded peak predator activity in the morning hours and followed peak predator activity in the evenings. Surprisingly, activity analyses showed deer use nocturnal behaviors at all sites. Coyotes remained crepuscular at both sites, while bobcats showed a diurnal pattern at random sites and crepuscular at bait sites. Deer at AmesREC might use temporal adjustments not spatial avoidance to reduce predation risk, and/or predators could adjust movements for prey availability. Understanding how predators influence deer behavior may help understand non-CWD threats to an already at-risk population.

CONTACT: jmy175@vols.utk.edu

NOTES:

*NAVIGATING THE TRIPPING POINT: TEMPORAL BASELINES FOR NEOTROPICAL DEER MANAGEMENT

Johny Tzib[1], Darby McPhail[1], David Lugo[1], Marcella Kelly[1]

[1]Department of Fish and Wildlife Conservation, Virginia Tech

ABSTRACT:

While managers in the USA ruminate on hunter decline and its impact on deer population regulation, the tripping point for Neotropical deer management is a fundamental lack of ecological understanding. While deer have been studied extensively in North America, there is scant information of deer ecology in the Neotropics. The focus of deer conservation in Belize, Central America hinges primarily on protected areas management to prevent unsustainable harvest. However, to evaluate this strategy, we must first understand how deer, navigate and survive in landscapes shared with competitors and predators, that are also impacted by human disturbance. We are evaluating the temporal partitioning between white-tailed deer and two sympatric species, the red brocket (*Mazama temama*) and recent positively identified Yucatan brown brocket (*Mazama pandora*). Additionally, we are investigating shifts in temporal activities in areas of high versus low use by humans and predators. Between 2013 and 2023, we deployed 30 to 60 camera stations per site in four sites annually. With a dataset exceeding 100,000 images, we are using kernel density estimation to map activity peaks and overlap coefficients. Preliminary results indicate white-tailed deer maintain a diurnal activity schedule and high temporal overlap with both brocket deer species. Ongoing analyses focus on quantifying how this synchronization shifts under the pressures of human disturbance and high jaguar and puma activity. Since current Belizean hunting regulations lack time-of-day considerations, results will provide the first baseline information on deer activity to determine if temporal restrictions are necessary to manage these species across the landscape.

CONTACT: johnyt@vt.edu

NOTES:

RT-QuIC DETECTION OF CHRONIC WASTING DISEASE PRIONS IN THIRD EYELIDS FROM WHITE-TAILED DEER

Jennifer Høy-Petersen [1], Kevin Niedringhaus [1], Davin M Henderson [2], John P Armstrong [1], Julia Livengood [3], Deepanker Tewari [3], Roderick B Gagne [1], Michelle Gibison [1]

[1]Department of Pathobiology, Wildlife Futures Program, University of Pennsylvania School of Veterinary Medicine
[2]CWD Evolution
[3]Pennsylvania Animal Diagnostic Laboratory System (PADLS), Pennsylvania Veterinary Laboratory

ABSTRACT:

Chronic wasting disease (CWD) is a fatal neurodegenerative disease in cervids which is caused by prions, and new cases continue to appear in populations in North America and globally. The United States Department of Agriculture-approved tests for diagnosing CWD use obex and/or retropharyngeal lymph nodes, which are challenging to collect as the tissues require anatomical knowledge, skill, and time to dissect. Third eyelids contain lymphoid follicles and are easier to collect. We determine whether third eyelids from naturally infected white-tailed deer are a reliable tissue for detecting CWD prions using real-time quaking-induced conversion (RT-QuIC), if positive results can be confirmed by immunohistochemistry, and if the results are reproducible between laboratories. Testing of third eyelids individually by RT-QuIC had a sensitivity of 94% and a specificity of 100%, and pooling of 5 third eyelids into one sample yielded a sensitivity of 100% and a specificity of 100%. Although IHC on third eyelid can be used in conjunction with RT-QuIC to support a positive diagnosis, using IHC on third eyelids in isolation should be performed with caution as additional validation for this tissue type is recommended. Our results support that testing third eyelids is a potentially more efficient way for management agencies to improve and expand their CWD surveillance.

CONTACT: mlucey@vet.upenn.edu

NOTES:

*MIGHTY PHRAGMITES: VEGETATION CHARACTERISTICS OF SIKA DEER BIRTH SITES

Paige Jarocki[1], Riley Lane[1], Andrew Slear[1], Angela Holland[1], Jacob L. Bowman[1]

[1]Department of Entomology and Wildlife Ecology, University of Delaware

ABSTRACT:

As sika deer (*Cervus nippon*) populations expand in Maryland, wildlife biologists need a greater understanding of the non-native species' reproductive ecology. Sika deer reproductive ecology is important to wildlife management as a factor of population dynamics. Despite the gaps in Maryland sika deer research, we do know they use freshwater and saltwater marsh when calving. We aim to study sika deer birth site selection to determine habitat use of calving deer. We are conducting this study in Dorchester and Wicomico Counties, Maryland during the 2024 and 2025 calving seasons (May - August). We used GPS collar and vaginal implant transmitter (VIT) data from adult female sika deer to locate birth sites. We conducted vegetation surveys at birth sites and randomly generated sites to determine vegetation structure and concealment cover. Vegetation characteristics of interest include vertical vegetation density, canopy cover, and basal area. We used paired t-tests to analyze differences in vegetation at birth sites and random sites. During 2024, 23 birth sites were located. We found that high vegetation density was a significant factor in birth site selection, with female sika deer selecting areas with tall dense vegetation (15% increase at birth sites). For the 2025 season, we have collared an additional 30 female sika deer and expect to double our sample size which will increase the power of our analysis. This study can offer more knowledge on sika deer reproductive ecology in Maryland, which can contribute to better management and improved landowner and hunter interactions with sika deer.

CONTACT: pjarocki@udel.edu

NOTES:

CWD PRION TRANSPORT AND REMEDIATION IN NATURAL SOILS

Stuart Lichtenberg[1], Anu Li, Nicole Lurndahl[1], Diana Karwan[1]

[1]University of Minnesota

ABSTRACT:

Prior work has found that prions, the causative agent of chronic wasting disease, migrate only the first 1-2 inches in soils, with little to no migration to lower horizons. However, these studies used older, less sensitive detection technologies than what is available now and purified prions which may represent the state of prions released into the environment naturally. In this work, we employed the real-time quaking induced conversion assay to measure the movement of prions through columns packed with soil. Further, we used enzymatically digested CWD+ deer brain homogenate as a prion source, more closely resembling natural prions. Surprisingly, we found that a fraction of prions migrate through the entire column and exit, while another fraction is constrained to the uppermost layers of the soil. In addition, translocation and retention behavior is dictated by soil type and effluent chemistry. Another line of research we are investigating is the decontamination of prions in soils. High temperature incineration is one of the few means to fully inactivate prions, but this methodology has yet to be examined in the context of contaminated soils. Using steel columns packed with artificially contaminated soil and dry surface heating, we were able to show that relatively short durations are required to inactivate prions in the uppermost ~1/2 inch of soil. Longer durations were able to inactivate prions through the entire length of the column (~5 inches). Together, this work implies that controlled burns may be a viable means of prion decontamination in soils.

CONTACT: licht213@umn.edu

NOTES:

ARE WILD WHITE-TAILED DEER IN PENNSYLVANIA DYING WITH OR OF CHRONIC WASTING DISEASE?

Jennifer Høy-Petersen[1], Justin D. Brown[2], Erin McDaniel[5], Matthew Shaub[1], Emma Kring Grunwald[1], Madison A. Davis[1], Roderick B. Gagne[1], Michelle Gibison[1], Andrew Di Salvo[5], Andrea Korman[5], Christopher S. Rosenberry[5], David Stainbrook[5], Alec Baker[3], Jessie E. Edson[3], Tyler S. Walters[3], W. David Walter[4], Kevin D. Niedringhaus[1]

[1]Department of Pathobiology, Wildlife Futures Program, University of Pennsylvania School of Veterinary Medicine
[2]Department of Veterinary and Biomedical Sciences, Pennsylvania State University
[3]The Pennsylvania Cooperative Fish and Wildlife Research Unit, Pennsylvania State University
[4]U.S. Geological Survey, Pennsylvania Cooperative Fish and Wildlife Research Unit, Pennsylvania State University
[5]Pennsylvania Game Commission, Bureau of Wildlife Management

ABSTRACT:

Chronic wasting disease (CWD) is a geographically widespread fatal neurodegenerative disease in cervids. Several pathologic lesions have been associated with CWD since its first detection in 1967 in captive mule deer in Colorado. Despite the investment in studying this disease, questions remain about how the disease affects free-ranging white-tailed deer, especially as it is introduced into new areas with different CWD prevalence, ecology, geography, and host prion protein genotype. It is often challenging to obtain robust mortality data from free-ranging wildlife due to environmental conditions, rapid carcass decomposition and scavenging along with limited/no case history. Our ongoing study explores pathological lesions in white-tailed deer that have died within Pennsylvania's CWD-endemic area to determine cause of death and comorbidities associated with CWD infection. We outfitted white-tailed deer with GPS-collars programmed to emit a mortality signal to facilitate prompt retrieval of carcasses for post-mortem diagnostics. So far, necropsied deer have a CWD prevalence of 67% (49/73). Nearly all deer that died from natural causes were CWD-positive (34/36, 94%) and several CWD-positive deer had poor body condition (27/36, 75%). Our results support previous associations between lesions and CWD but also sheds light on other causes of death in a white-tailed deer population with high CWD prevalence. This project is ongoing, but data collection will be complete by the conference dates.

CONTACT: jehoy@upenn.edu

NOTES:

COFACTOR: A ROLE-PLAYING VIDEO GAME TO ENGAGE NEW AUDIENCES IN CHRONIC WASTING DISEASE MANAGEMENT

Thomas Seiler[1], Tonya Seiler[1], Marc Schwabenlander[1]

[1]Minnesota Center for Prion Research and Outreach, University of Minnesota

ABSTRACT:

Chronic wasting disease (CWD) threatens deer populations, hunter participation, and wildlife-related economies across the United States. *Cofactor*, an interactive, role-playing video game, was designed as a browser-based adventure in which players begin as hunters and later assume the roles of scientists, butchers, or natural resource managers, each confronting realistic hunting scenarios, disease testing protocols, and regulatory decisions. During a pilot phase, 25 high school teachers from Minnesota will integrate three 45-minute sessions into Agriculture and Environmental Science curricula; student surveys (n ~ 500) provide revision feedback on knowledge gain, attitudes, and interests associated with game content such as hunting, CWD, and game roles. We expect pre- and post-game assessments show increases in correct prion concepts and a rise in self-reported willingness to participate in local surveillance programs. Gameplay logs will record paths taken, time spent, and decision outcomes, providing novel data on motivational cues for hunter engagement. These evaluate *Cofactor*'s capacity to educate, foster empathy for diverse stakeholder perspectives, and reinforce recruitment, retention, and re-engagement strategies essential as hunting participation declines. In parallel, game developers will engage an advisory committee (of natural resource managers, laboratory scientists, educators, communicators, organizational representatives, etc.) in molding content and messaging to be effective and multifaceted. *Cofactor* promises a scalable outreach tool that can be customized to state-specific regulations and disease prevalence, offering an innovative avenue for education, empathy building, capturing public attitudes toward CWD mitigation, and recruitment to support deer management objectives at a potential tipping point for recreational hunting across the USA.

CONTACT: seiler@umn.edu

NOTES:

*WHITE-TAILED DEER NURSING BEHAVIOR: INTRINSIC AND EXTRINSIC FACTORS AFFECTING MATERNAL INVESTMENT

Emma G. Wittschen[1], W. Hunter Ellsworth[1], George R. Goto[1], Lisa A. Jorge[1], Gino J. D'Angelo[1]

[1]Warnell School of Forestry and Natural Resources, University of Georgia

ABSTRACT:

Lactation, a fundamental aspect of maternal investment in deer, determines early fawn growth and body mass, with consequences for survival and recruitment. Offspring recruitment is a critical component of large herbivore population dynamics, and white-tailed deer in the southeastern USA are experiencing diminished recruitment in some areas. Understanding the factors that increase maternal investment via nursing may provide novel management actions to influence fawn recruitment in the Southeast. Accordingly, we divided two captive deer pens into 56 treatment plots each and randomly assigned four habitat treatments to plots by constructing artificial habitat structures of increasing habitat complexity: no treatment, horizontal cover, vertical cover, and combined horizontal-vertical cover. Using three 15-minute daily observations of focal fawns, we tracked 203 doe-fawn nursing events across six adult females and 12 fawns during the first 60 days of life. We investigated the effects of extrinsic environmental factors, habitat treatments, and intrinsic doe-fawn characteristics on nursing duration. Nursing duration increased as habitat complexity (via treatments), canopy cover, and dam body weight increased, and decreased as sibling number increased. Our results suggest that modifying habitat, such as
creating complex cover, can influence nursing behavior. Further research is needed to see if habitat alteration encourages increased maternal investment with potential cascading effects on recruitment. Recent research in the Southeast has highlighted manipulating maternal behavior as a mechanism to impact fawn recruitment, as growing evidence suggests predator removal is ineffective. Understanding the factors that influence maternal investment may provide new management interventions to increase recruitment in declining populations.

CONTACT: egw72530@uga.edu

NOTES:

*CAN IMMIGRATION RESCUE A WHITE-TAILED DEER POPULATION FROM CWD-INDUCED DECLINES?

Jacob Wyrick[1], Justin Kosiewska[1], Cameron Mitchell[1], Mark Wilber[1], Daniel Grove[1], Dailee Metts[1], Lisa Muller[1]

[1]University of Tennessee School of Natural Resources

ABSTRACT:

During 2021–2025, the Tennessee Wildlife Resources Agency conducted fixed-wing, thermal imaging surveys to assess deer density at Ames AgResearch and Education Center (AmesREC). Deer density estimates did not significantly decline across the monitoring period despite consistently high prevalence of chronic wasting disease (CWD, >30% positive since 2020). We used deer capture data and stage-structured models to evaluate population-level processes (reproduction, survival, immigration) that could promote an apparently stable deer density with high CWD prevalence. From 2023–2024, we captured adult deer (n = 54) and fitted them with Iridium Satellite GPS collars. A subset of 23 females received vaginal implant transmitters (VITs). We collected hair for genetic analysis using 21 microsatellites. Pregnancy rates were high (89%), including fawn pregnancies. Eight of the females with VITs died before they would have given birth. We captured and collared four fawns for up to 20 days before collars were lost. We determined adult annual survival (57%) and used 12-week neonatal survival rates from the literature to model the population. Our most conservative demographic models predicted that population growth (λ) was <1.0; therefore, we would expect a 12-30% population decline over 10 years. Our genetic structuring analysis showed that AREC had contributions from seven populations, suggesting likely immigration. Immigration may be acting in a compensatory manner to maintain population density at an apparently stable level. When considering management options to limit the spread of CWD, we need to account for all factors affecting population growth rates and the possible contributions from surrounding areas.

CONTACT: qjl677@vols.utk.edu

NOTES:

*RESEARCH IN PROGRESS: COMPETITION OF SIKA DEER AND WHITE-TAILED DEER ON THE DELMARVA PENINSULA

Rebekah Manti, Angela Holland, Jacob Bowman

University of Delaware

ABSTRACT:

In 1916, Clement Henry released 5 sika deer (Cervus nippon) on James Island in Dorchester County, Maryland. These individuals are the source of the 10,000 - 20,000 sika deer that currently inhabit the Delmarva Peninsula. Sika deer are a unique resource, which attract an estimated 5,000 hunters annually, but they also compete with native ungulates in other areas where they have been introduced. Kalb et al. (2018) documented some dietary competition between Sika deer and native white-tailed deer on the Delmarva Peninsula. Impacts of expanding sika deer range and increasing sika numbers on native white-tailed deer populations are important for management of both species on the Delmarva Peninsula. We will investigate competition between these species in Dorchester and Wicomico counties using spatial ecology and survival. We will capture 15 adult female sika deer and 15 adult female white-tailed deer each field season from 2026 - 2028 to meet our objectives. Our objectives are to estimate habitat selection for each species, compare habitat selection between species, compare survival rates between species, and investigate the use of proximity sensors to demonstrate avoidance behavior. This research will clarify the impact of competition on deer management and recommend management strategies that will be most effective for managing both deer species in Maryland.

CONTACT: rebekahh@udel.edu

NOTES:

*EVALUATING COMMON SUPPLEMENTAL FEEDING STRATEGIES AND THEIR IMPACT ON FEMALE WHITE-TAILED DEER OVERWINTER CONDITION IN HIGH-FENCED ENCLOSURES

Brady Boykin[1], Michael Cherry[1], Whitney Hansen[1]

Caesar Kleberg Wildlife Research Institute, Texas A&M-Kingsville

ABSTRACT:

Supplemental feeding is widely used as a management tool for white-tailed deer (Odocoileus virginianus) to improve fitness, buffer environmental stress, and enhance harvest quality. By refining our understanding of feeding regimes, we can amplify benefits and mitigate costs for deer managers. We are conducting a replicated, multi-year experiment to determine how differing feeding regimes influence the fitness of wild deer stocked into high-fenced enclosures. In March 2024, we captured 96 adult females and 32 adult males, collected baseline fitness metrics, and stocked them at densities of 24 females and 8 males into four separate 200-acre enclosures (0.16 deer/acre). Predators and competing species were removed from enclosures prior to stocking, and predator wire was buried at the base of the 2.5-meter perimeter fence to ensure exclusion. Each enclosure received a distinct feeding treatment: cotton seed and 20% protein pellet with feed removal from November-January (T1); cottonseed plus pellet ad libitum (T2); cottonseed only ad libitum(T3); pellet only ad libitum(T4). In January 2025, we recaptured 15 females to reassess body condition and quantify changes over time. We compared weight changes between sampling events to evaluate the effects of the four supplemental feeding regimes. Females in T1 lost an average of 14.9% of their body weight. Females in T2 lost 13.5%. Females in T3 lost 15.1%. Females in T4 lost 12.5%. These results provide insight into how common feeding strategies influence overwinter body condition in stocked deer managed at moderate densities and could also determine if these strategies could have a reproductive effect on deer.

CONTACT: brady.boykin@students.tamuk.edu

NOTES:

Table 1. Southeastern State Deer Harvest Summaries for the 2024-2025 Season.

State	Land Area (sq. mi.)	Deer Habitat		% Forested	% Land Area Public Hunting	Harvest		
		sq. mi.	% total			Male	Female	Total
AL	51,628	46,981	91	69	5	144,828	176,220	321,048
AR	52,068	38,607	74	56	12	109,704	90,581	200,285
DE	1,969	1,554	79	28	5	7,979	10,844	18,823
FL	53,632	27,573	51	48	17	77,006	36,623	113,629
GA	59,425	38,000	64	64	5	130,937	143,203	274,139
KY	40,406	38,200	95	50	9	86,071	63,797	149,868
LA	41,406	26,562	64	52	10	133,840	105,160	239,000
MD	9,707	8,567	88	39	6	34,291	49,910	84,201
MS	47,296	39,062	83	68	6	121,459	149,830	271,836
MO	69,561	63,910	92	31	4	152,714	122,942	275,656
NC	52,660	36,154	67	57	6	106,657	82,143	188,800
OK	69,919	37,425	54	19	3	67,360	61,015	128,375
SC	30,207	21,920	73	63	8	105,076	85,631	190,707
TN	41,152	34,045	83	47	7	98,439	69,541	167,980
TX	261,914	169,667	65	40	1	425,529	411,481	837,010
VA	38,818	34,494	89	57	10	115,536	92,836	208,372
WV	24,078	22,972	95	79	11	69,253	42,393	111,646
Avg or Total	945,846	685,693	76.9	51.0	7.30	1,986,679	1,794,150	3,781,375

Table 1. continued

State	Harvest/ sq. mi. Deer Habitat	Method of Collection[1]	Estimated Pre-season Population[2]	Length of Season[3]			Method of Setting Seasons[4]	% Land Area Open to Dog Hunting
				Archery	Black Powder	Firearms		
AL	6.80	A, B, C, E, F	1,300,000	133(C)	5(A)	95(A,C)	A, B	67
AR	5.19	A, F	800,000	155(C)	12(A,B)	50(C)	A, B	70
DE	3.48	F	31,000	153(C)	16(A,B)	46(A,B)	B, C	0
FL	4.12	E, F	NA	35-38(A)	14(A,B)	74-79(C)	A, B	20
GA	7.20	C, D, E, F	1,300,000	128-145 (A,B,C)	90-97 (A,C)	83-90(C)	A, B, C	23
KY	3.92	A, C, D, F	1,023,000	140(C)	11(A,B)	27(C)	A, B, C	0
LA	8.99	B, C, F	1,000,000	119-138 (C)	14(A,B)	64-79(C)	A, B	80
MD	9.82	B, C, D, F	263,644	112(C)	18(A,B)	18; 2 (jr days) (A,B)	A, B, C	0
MS	6.96	C, E	1,600,000	141(C)	0	98(C)	A, B, C	85
MO	4.31	D, F	1,700,000	112(C)	11(B)	16-30(C)	A, B	0
NC	5.22	A, B, C, D, F	1,072,786	120-156 (C)	14(C)	33-75(C)	A, B, C	50
OK		A, B, C, D, F	750,000	107(C)	9(A)	16(B)	A, B	0
SC	8.70	F	700,000	16(A)	10(A)	70-140(C)	C	60
TN	4.93	A, B, F	1,000,000	45(C)	14(C)	44(C)	A, B	0
TX	4.93	B	5,015,119[4]	35(A)	14(B)	65-93(B,C)	A, B	0
VA	6.04	B, C, F	1,300,000	42-77 (C)	14-36 (A, B)	15-50(A,B)	A, B	55
WV	4.90	F	480,000	99(C)	11(C)	26(C)	A, B, C	0
Avg or Total	5.97		19,335,549					30.0

[1] A—Check Station; B—Mail Survey; C—Jawbone Collection; D—Computer Models; E—Telephone Survey; F—Telecheck/Electronic Check (online/mobile).

[2] Texas population estimates should not be compared to estimates prior to 2005 due to changed methodology.

[3] A—Early Season; B—Late Season; C—Full Season.

[4] A—Harvest & Biological; B—Departmental/Commission Regulatory; C—Legislative.

Table 1. continued

State	# of Hunters	5-Year Trend	Hunting License Fees (Full Season Cost)		Harvest Reporting		
			Resident	Non-Resident	Proof of Harvest Requirement	Mandatory/ Voluntary/ None?	Bonus Tag Availability?
AL	235,865	Stable	$33.55	$389.40	Hunter Log	Mandatory	DMAP, WMAs, & CWD Management Zone
AR	280,000	Stable	$10.50-25.00	$100.00-410.00	License Tag (Physical), Electronic Tag	Mandatory	DMAP tags
DE	13,800	Stable	$39.50	$199.50	Hunter Log, Electronic Tag, License Tag (Physical), Harvest Report Card	Mandatory	Additional Antlerless, DDAP
FL	167,233	Stable	$22.00	$156.50	Electronic Tag	Mandatory	Private Lands Programs
GA	227,672	Stable	$40.00	$325.00	Hunter Log, Electronic Tag	Mandatory	DMAP & WMAs
KY	300,000	Stable	$62.00	$395.00	Electronic Tag	Mandatory	Deer Damage Tags in select zones
LA	213,500	Stable	$35.00	$300.00	License Tag (Physical), Hunter Log, Electronic Tag	Mandatory	DMAP tags
MD	37,857	Down	$35.00	$160.00	License Tag (Physical), Electronic Tag	Mandatory	Antlered only
MS	180,636	Stable	$45.00	$475.00	None		DMAP tags
MO	476,914	Stable	$38.50	$553.00	License Tag (Physical), Electronic Tag	Mandatory	DMAP
NC	264,123 (total licensed); 204,584 (deer)	Down	$47.00	$238.00	License Tag (Physical), Electronic Tag	Mandatory	DMAP, CDMAP, CWDMAP
OK	362,938	Stable	$36.00	$710.00	Electronic Tag, Hunter Log	Mandatory	DMAP
SC	190,331	Stable	$18.00	$235.00-375.00	License Tag (Physical)	Mandatory	Yes & DMAP
TN	226,585	Up	$66.00	$214.00-305.00	Electronic Tag	Mandatory	Bonus buck, CWD Earn-A-Buck
TX	763,152	Stable	$25.00	$315.00	License Tag (Physical), Electronic Tag	Mandatory/Voluntary	MLDP
VA	183,021	Down	$46.00-82.00	$197.00-259.00	Electronic Tag	Mandatory	Unlimited on private land lands, antlerless only
WV	168,292	Stable	$35.00	$196.00	License Tag (Physical)	Mandatory	Yes
Total	4,232,380						

Table 1. continued

State	Mandatory Orange	Crossbows Permitted	Deer Hunting-Related Accidents						Deer-vehicle Collisions[5]
			Firearms		Stands		Other		
			Injuries	Fatalities	Injuries	Fatalities	Injuries	Fatalities	
AL	Yes	Yes	4	0	3	1	NA	NA	30,000(C)
AR	Yes	Yes	2	0	11	0	1	0	19,099(C)
DE	Yes	Yes	NA	NA	NA	NA	NA	NA	7,278(C)
FL	WMAs only	Handicap, Yes	NA	NA	NA	NA	NA	NA	23,211(C)
GA	Yes	Yes	NA	NA	NA	NA	NA	NA	64,367(C)
KY	Yes	Specific Season, Handicap	NA	NA	NA	NA	NA	NA	22,238(C)
LA	Yes	Yes	2	1	4	0	1	1	12,271(C)
MD	Yes	Yes	2	0	14	0	0	0	29,589(C)
MS	Yes	Yes	6	0	6	2	0	0	26,778(C)
MO	Yes	Yes	7	0	NA	NA	NA	NA	34,956(C)
NC	Yes	Yes	0	0	3	1	0	0	68,837(C)
OK	Yes	Yes	NA	NA	NA	NA	NA	NA	20,000(C)
SC	WMAs only	Yes	11	2	4	1	--	--	6,628(A)
TN	Yes	Yes	NA	NA	NA	NA	NA	NA	33,068(C)
TX	WMAs only	Yes	3	0	3	1	1	0	67,617(C)
VA	Yes	Yes	18	1	9	0	1	0	56,523(C)
WV	Yes	Yes	1	0	6	2	4	1	21,941(C)
Total			56	4	63	8	8	2	544,401

[5] A—Actual number based on reports; B—Estimated road kill; C—State Farm estimate

Table 1. continued

State	Limits[6]			Antler Restrictions[7]	% Hunting Success[8]				Avg. Leasing Fees/Acre
	Season	Antlerless	Antlered		Archery	Muzzle-loader	Firearms	Overall	
AL	3/None	1-2 per day depending on zone	3	A (one buck must have 4 points on 1 side); B (one county all bucks must have 3 points on one side); C (23 WMAs and SOAs)	UNK	UNK	UNK	UNK	$10-25
AR	6	3-6	2	C. No antler restrictions within CWD Management Zone	UNK	UNK	UNK	54.20%	$8-12
DE	6	4-5	2	A. Buck of choice, 15" spread minimum	22%	10%	68%		$5-20
FL	5	2-3	5	C. Vary by Deer Management Unit	UNK	UNK	UNK	39.30%	$10-25
GA	12	10	2	B. One buck must have 4 points on one side or a 15" outside spread	11%	3%	48%	55%	$10-25
KY	None	1-Unlimited	1	A	UNK	UNK	UNK	35%	$5-40
LA	6	2-4	2-3	No antler restrictions	20%	21%	55%		$8-40
MD	Varies	Varies	2 only 1 with firearm	A. 3-pt restriction on two bucks	38%	30%	44%	56%	$5-35
MS	Varies	3, 5, 10, depending on zone	3, 4 depending on zone	C. No antler restriction in NC zone, 10" IS or 13" MB; 12" IS or 15" MB; all zones have one buck of choice	36%		60%	64%	UNK
MO	None	Unlimited (archery); 1-5 (firearms)	2	B	22%		37%		--
NC	6	4 (unlimited bonus tags for Urban Archery)	2	No antler restrictions	UNK	UNK	UNK	53.60%	UNK
OK	6	up to 6	2	No antler restrictions	33%	22%	42%	UNK	$8-35+
SC	8+	3+	5	A (on 2 of buck limit); C (16 WMAs)	25%	17%	60%	60%	$8-20
TN	None	Varies by DMU and weapon type	2	No antler restrictions	UNK	UNK	UNK	43%	UNK
TX	5	5	3	B. 117 counties with antler restrictions of 13" minimum inside spread	UNK	UNK	UNK	66.70%	$3-30
VA	5 WBR, 6 EBR	6	2 or 3	B. 1 WMA	UNK	UNK	UNK	51%	UNK
WV	11	Up to 8	2 statewide except 3 in CWD containment area or by XS license holders	C. 5 WMAs & 2 State Forests	40%	17%	50%		$3-10
Avg.					27.40%	17.10%	51.60%	31.10%	

[6] AL – 3 antlered bucks per season. No season limit on antlerless deer.
FL – A total of two deer may be harvested per day. Both may be antlerless deer during archery season and if taken with antlerless deer permits. Only on/day may be antlerless during firearms antlerless deer seasons.
MD – In Region B: 10 antlerless deer limit in firearms, 20 antlerless deer limit in muzzleloader, 15 antlerless deer limit in archery. In Region A: 2 antlerless deer limit, no more than one per weapon season. Statewide Antlered Deer Limit: Two antlered deer, no more than one in a weapon season. One bonus antlered deer may be harvested in Region B during any weapon season.
MO – No daily or annual limit of antlerless deer but number than can be harvested in each county varies.
NC – Unlimited bonus antlerless tags are available during the Urban Archery Season in participating municipalities.
[7] A—Statewide Antler Restrictions; B—County Antler Restrictions; C—Region or Area Antler Restrictions.
[8] Averages do not include combined reports.

Table 1. continued

State	Private Lands Programs						
	Type[9]	Minimum Acreage Requirements	Fee	# of Cooperators	Trail Wounded Deer with Dogs Legal?	Supplemental Feeding Legal?	Baiting Legal?
AL	A	None	None	152	Yes	Yes, No supplemental feeding in CWD Management Zone	Yes, No supplemental feeding in CWD Mgt Zone
AR	A	500	None	725	Yes	Yes, No feeding within CWD Management Zone with the exception of Level 3 DMAP clubs	Yes, Bait may be used within the CWD Management Zone Sept. 1 - Dec. 31
DE	B, E	>20 acre LEN	None	571	No	Yes, Regulation change to come	Private only
FL	A, C, E	640, 5000	None	AD: 880; PLDMP: 39; DDEP: 1145	Yes	Private lands only, not allowed in CWD management zone outside the hunting season	Private lands only, not allowed in CWD management zone outside the hunting season
GA	A, C, D, E	250-1,500	$100.00-1,000.00	452	Yes	Yes on private, no on public land	Yes on private, no on public
KY	B	None	None	1,000	Yes	Except Mar-Jul; restricted to dispersed feed in CWD zones	Private only, restricted Mar-Jul, restricted to dispersed feed in CWD zones
LA	A	>40	$100.00-1500.00	804	Yes	Yes, Except public lands and CWD Control Area	Yes, Except public lands and CWD Control Area
MD	None	None	None	NA	Yes	Private only	Private only
MS	A, E	None	None	558	Max 2 dogs; deer can be dispatched with ≤45 cal handgun after legal shooting hours	Yes, Except public lands and CWD Management Zones; feed must be in above ground, covered feeders or in a stationary spincast feeder	Yes, Hunting is allowed over supplemental feed with no distance requirement
MO	A, B, E	25 (urban) 250 (rural)	None	133 properties	Yes	Yes, Except CWD Management Zone counties and MDC lands	No
NC	A, B, C, E	Varies by program	None	DMAP: 45; CDMAP: 17; CWDMAP: 36	Yes Must be leashed	Yes, Except Jan 2 through Aug 31 in CWD Surveillance Areas. Not allowed on game lands	Yes, Except Jan 2 through Aug 31 in CWD Surveillance Areas. Not allowed on game lands
OK	A	1,000	$200.00-400.00	80-100	Yes Must be leashed	Yes, private only	

Table 1. continued

State	Private Lands Programs						
	Type[9]	Minimum Acreage Requirements	Fee	# of Cooperators	Trail Wounded Deer with Dogs Legal?	Supplemental Feeding Legal?	Baiting Legal?
SC	A	None	$50	1,355 (3.0 million acres)	Yes	Private only	Private only
TN	B, E	None	None	~500	Must notify agency personnel, be leashed	Yes, Can only occur within 100ft of house in CWD area	No
TX	A MLDP	None	$30.00-300.00	11,271 properties in MLDP (29.6 million acres)	Yes	Yes	Yes
VA	A DCAP	None	None	DMAP: 617; DCAP: 925	Yes Weapon allowed	Illegal Sep 1 -first Sat in Jan statewide. Illegal year-round in 44 of 95 counties	No
WV	No				Yes Must be leashed	Illegal on all public lands and on all lands in CWD DMA	Illegal on all public lands and on all lands in CWD DMA

[9] A—DMAP; B—Landowner tags; C—Antlered buck tags; D—Fee MAP.

Table 2. Southeastern State Summaries of Chronic Wasting Disease (CWD) Surveillance and Management Information for Captive and Wild Cervids, 2026.

State	Year of First Detection	Previous Year Cervid Testing Season				Total Cervid Testing (all years)				Number of Positive Counties	Sampling Methods	Surveillance and Management Practices
		Captive		Free Range		Captive		Free Range				
		#S	#P	#S	#P	#S	#P	#S	#P			
AL[1,C]	2021	396	0	3,170	7	2,468	0	>22,000	12	2	A, B, D.	A, B, C, D, E, F, G, I
AR[1,C]	2016	75+	0	8,691	249	1,000+	0	68,134	2,036	24	A, B, C, D	A, B, C, D, E, F, G I, J
DE[1,D]	NA	0	0	641	0	0	0	12,459	0	0	A, B, D	A, B, E, F, G, I, J
FL[1,B]	2023	15	0	3,974	1	152	0	26,341	2	1	A, B, D.	A, B, C, E, F, G, I
GA[1,4,B]	2025	UNK	UNK	1,861	2	UNK	0	19,646	10	3	A, B, D	A, B, C, E, F, I
KY[2,B]	2023	UNK*	1	9,720	0	>3,000*	1	>60,000	1	2	A, B, D	A, B, C, D, E, F, G, I
LA[1,A]	2022	UNK*	4+	2,600	18	UNK*	4+	21,113	40	2	A, B, D	A, B, C, E, F, H, I
MD[2,C]	2010	0	0	1,312	62	0	0	15,706	285	7	A, B, D	A, B, C, E, F
MS[1,B]	2018	563	1	10,170	127	4,783	6	53,698	557	18	A, B	A, B, C, D, E, F, G, H, I
MO[1,C]	2010	634	0	36,242	243	5,344	11	321,680	815	46	A, B, C, D	A, B, C, D, E, F, G, I, J
NC[1,A]	2022	UNK	0	23,795	10	>2,000	0	99,301	34	5	A, B, D	A, B, C, D, E, F, G, H, I
OK[1,B]	1998	UNK	--	150	1	UNK	UNK	13,000	8	3	A, D	A, C, E, F, I
SC[1,B]	NA	0	0	1,351	0	0	0	6,946	0	0	A, B, D	A, B, E, F, H, I
TN[1,B]	2018	UNK*	0	14,972	757	UNK*	0	119,000	4,278	18	A, B, C, D	A, B, C, G, H, I, J
TX[2,C]	2012	30,918	384	13,504	33	263,629	994	114,642	228	38	A, B, D	A, B, D, E, I
VA[1,C]	2009	10	0	8,101	109	602	0	55,323	362	18	A, B, D	A, B, C, D, E, F, G H, I
WV[1,A]	2004	UNK	UNK	1,060	111	UNK	UNK	>23,000	844	7	A, B, C, D	A, B, C, F, G, I
	TOTAL	32,611	390	141,314	1,730	282,979	1,016	1,051,992	9,512	194		

Note: Captive refers to pen facilities or release sites (high-fenced pastures/enclosures). Those states that have not tested captive sites may not have the authority to do so.

#S=Number samples
#P=Number positive
UNK=Unknown
* For Herd Certification Program herds only

Sampling Period

[1] July 1 – June 30
[2] March 1 – February 28
[3] September 1 – August 31
[4] Included positive found post sampling period

Captive Cervid Authority

[A] State Fish and Wildlife Agency does not have captive cervid authority
[B] State Fish and Wildlife Agency has shared captive authority
[C] State Fish and Wildlife Agency has full captive cervid authority
[D] No captive cervid industry

Sampling Methods Key

A. Hunter Harvested (taxidermist, meat processor, veterinarian, drop-off freezer/container, and/or CWD sampling station)
B. Select Sampling (roadkill, sick deer, and/or found dead)
C. Targeted Sharpshooting
D. Risk Based

Surveillance and Management Practices Key

A. CWD Surveillance and/or Management Plan
B. Statewide and/or targeted CWD sampling
C. Establish CWD Management Zones
D. Require captive cervid testing
E. Live cervid importation restriction
F. Dead cervid transportation restriction
G. Bating restriction
H. Lures or other body fluid use restriction
I. Outreach/Education campaigns regarding CWD
J. Targeted removals

NOTES

NOTES

THANK YOU TO ALL OF OUR SPONSORS AND DONORS!

Platinum

VALE

MUDDY

STEALTH CAM

HuntStand

ON X HUNT

Gold

GREEN TOP EST. 1947

Silver

Carter CAT

Dominion Energy

Powering Your Every D

ATS ADVANCED TELEMETRY SYSTEMS

VIRGINIA DEER HUNTERS ASSOCIATION Est. 1985

APPALACHIAN HABITAT ASSOCIATION

NATIONAL DEER ASSOCIATION

Westervelt Westervelt Recreation

Bronze

VT COLLEGE OF NATURAL RESOURCES AND ENVIRONMENT FISH AND WILDLIFE CONSERVATION VIRGINIA TECH

OUTDOOR ACCESS

NoahHorn WELL DRILLING

BIWFC BOTSTIBER INSTITUTE FOR WILDLIFE FERTILITY CONTROL

THE IZAAK WALTON LEAGUE OF AMERICA

JAMES RIVER EQUIPMENT

FARM BUREAU VIRGINIA

VIRGINIA'S BLUE RIDGE

RMS Creating Forest Value Since 1950

Priogen

Ray Carter (Personal Donation)

Contributor

HOLLOW TOOTH VIRGINIA RESTORING BALANCE

VIRGINIA EST. 1941 BOWHUNTERS ASSOCIATION

Virginia National Wild Turkey Federation

WILDLIFE FOUNDATION OF VIRGINIA

SWVA Sportsmen

BOXLEY

RESPONSIVE MANAGEMENT

StewardGreen Wildlife Habitat Solutions

Nutrien

Rockingham County Branch-NDA

In memory of Gary Cave

See Y'all Next Year in Mississippi for the

50th Meeting

of the Southeast Deer Study Group!!