

62nd Annual Texas Chapter of The Wildlife Society Meeting



“Margins Matter: Wildlife on the Edge in a Changing Texas”

*Galveston, TX
February 18-20, 2026*

2025-2026 Executive Board

Executive Director	Matt Wagner
President	Jessica Glasscock
President-elect	Bill Adams
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Program

Benjamin Olsen, Kristyn Murphy, Matthew Reidy, Lindsay Martinez, Shelby duPerier and Megan Granger

Local Arrangements

Hope Zubek, Mikaela Egbert, and David Riley

Student Activities & Posters

Sarah Lucht, SaraBeth Hill, Jake Hill, Molly Koeck, Audrey Taulli, Emily Blumentritt, Joeseeph Richards, Shaelyn Rainey, Laken Mize, Abby Buckner, Shelby duPerier, Steven Goertz, Kaitlin O'Brien Friesenhahn, Howard Crenshaw



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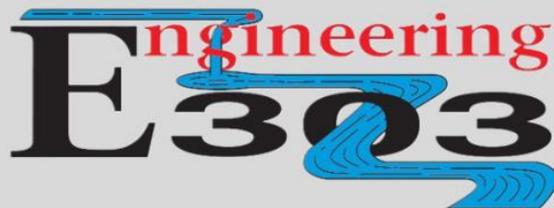
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CONSERVING THE LAST FRONTIER



Wednesday, February 18, 2026

8:00 AM - 5:00 PM	Exhibits Hall	Moody Ballroom
8:00 AM - 5:00 PM	Raffle, Photo & Art, Naturalist Contest	Moody I & Moody II
8:00 AM - 5:00 PM	Registration	Registration
9:00 AM - 11:00 AM	Turning Sound Into Discovery	Salon A
9:00 AM - 12:00 PM	Fundamentals of Wildlife Photography & Outdoor Storytelling	Salon B
8:00 AM - 12:00 PM	Introduction to Occupancy Models for Wildlife Research in R	Salon C
8:00 AM - 12:00 PM	Data Management in R for Beginners	Salon F & G
8:00 AM - 12:00 PM	Your First Step in Wildlife Careers: Applications, Expectations, and Education	Salon H
9:00 AM - 12:00 PM	Certification through The Wildlife Society	Vine 1 & 2
8:00 AM - 12:00 PM	Building Strong Roots: Engaging Landowners and Navigating 1-d-1 Open Space Valuation in Texas	Ivy 1 & 2
8:00 AM - 12:00 PM	Newly Available Decision Support Tools for Grassland Bird Conservation	Floral Hall A1
8:00 AM - 12:00 PM	An Introduction to Beta Diversity for Beginners	Daffodil
8:00 AM - 5:00 PM	Sometimes in Fire You Get The Test Before The Lesson	Wisteria
8:00 AM - 1:00 PM	Restoring the Edge: Wetland and Black Rail Conservation at Chocolate Bay	Offsite
8:00 AM - 5:00 PM	Nursing/Pumping Room	Office 2
8:00 AM - 5:00 PM	James G. Teer Leadership Institute Training	Floral Hall A2
8:00 AM - 5:00 PM	Practice Room & Quiet Area	Iris & Tulip
1:30 PM - 3:00 PM	Executive Board Meeting	Salon H
2:30 PM - 4:00 PM	Student Plant ID Competition	Exhibit Hall A4
4:00 PM - 5:15 PM	Student Poster Competition	Exhibit Hall A1 & A2
5:00 PM - 7:30 PM	Welcome Dinner & Plenary Session	Exhibit Hall B
7:30 PM - 10:00 PM	Welcome Social	Aquarium Pyramid

Thursday, February 19, 2026

8:00 AM - 5:00 PM	Exhibits Hall	Moody Ballroom
8:00 AM - 10:00 AM	Membership Meeting	Salon H
8:00 AM - 5:00 PM	Registration	Registration
8:00 AM - 5:00 PM	Raffle, Photo & Art, Naturalist Contest	Moody I & II
8:00 AM - 9:00 AM	Coffee Break – Sponsored by Compass Environmental Solutions	Moody Ballroom
8:00 AM - 5:00 PM	Practice Room & Quiet Area	Iris & Tulip
8:00 AM - 5:00 PM	Nursing/Pumping Room	Office 2
8:00 AM - 5:00 PM	James G. Teer Leadership Institute Training	Floral Hall A2
9:30 AM – 12:00 PM	Cottam Award Presentations	Exhibit Hall B
12:30 PM - 1:30 PM	Past Presidents Lunch	Viewfinder
1:30 PM - 3:00 PM	Conservation & Ecology – Mammals I	Salon F & G
1:30 PM - 3:00 PM	Conservation & Ecology – Birds I	Vine 1 & 2
1:30 PM - 3:00 PM	New Technology & Applications	Salon B
1:30 PM - 3:00 PM	Wildlife Disease & Toxicology I	Ivy 1 & 2
3:00 PM - 3:30 PM	Coffee Break	Moody Ballroom
3:15 PM - 4:30 PM	Conservation & Ecology – Mammals II	Salon F & G
3:15 PM - 4:30 PM	Conservation & Ecology – Birds II	Pioneer II
3:15 PM - 4:30 PM	Conservation & Ecology of Reptiles & Amphibians	Salon B
3:15 PM - 4:30 PM	Wildlife Disease & Toxicology II	Ivy 1 & 2
4:00 PM - 6:00 PM	Quiz Bowl	Exhibit Hall B
6:00 PM - 8:00 PM	Student Awards & Dinner	Exhibit Hall B
8:00 PM - 10:00 PM	After Awards Reception	Exhibit Hall B

Friday, February 20, 2026

7:00 AM - 8:00 AM	Student Breakfast – Sponsored by Compass Environmental Solutions, LLC, Devils River Conservancy, Habitat Select Nursery, Rayonier, and Texas Brigades.	Exhibit Hall B
8:00 AM - 10:00 AM	Conservation Affairs	Salon H
8:00 AM - 5:00 PM	Raffle, Photo & Art (Voting ends at 1pm)	Moody I & II
8:00 AM - 5:00 PM	James G. Teer Leadership Institute Training	Floral Hall A2
8:00 AM - 5:00 PM	Practice Room and Quiet Area	Iris & Tulip
8:00 AM - 5:00 PM	Nursing/Pumping Room	Office 2
9:00 AM - 10:00 AM	Conservation & Ecology – Mammals III	Salon F & G
9:00 AM - 10:00 AM	Conservation & Ecology – Birds III	Vine 1 & 2
9:00 AM - 10:00 AM	Urban Wildlife	Ivy 1 & 2
9:00 AM – 10:00 AM	Natural Resource Management I	Salon B
10:00 AM – 10:30 AM	Coffee Break	Moody Ballroom
10:15 AM - 12:00 PM	Conservation & Ecology – Mammals IV	Salon F & G
10:15 AM - 12:00 PM	Conservation & Ecology – Birds IV	Vine 1 & 2
10:15 AM - 12:00 PM	Natural Resource Management II	Salon B
10:15 AM – 12:00 PM	Human Dimensions and Conservation Policy	Ivy 1 & 2
1:00 PM - 3:15 PM	Conservation & Ecology – Mammals V	Salon F & G
1:00 PM – 3:15 PM	Conservation & Ecology – Birds V	Vine 1 & 2
1:00 PM – 3:15 PM	Conservation & Ecology of Wildlife Communities	Ivy 1 & 2
2:00 PM - 2:30 PM	Coffee Break	Moody Ballroom
2:30 PM - 4:00 PM	Executive Board Meeting	Salon H
3:00 PM - 5:30 PM	TAMU Reception	Garden Terrace
4:00 PM - 5:30 PM	Noncompetitive/Professional Poster Session	Exhibit Hall A2
4:30 PM – 6:00 PM	BRI Reception	Salon A
6:00 PM - 8:00 PM	Professional Awards Presentation & Dinner	Exhibit Hall B
8:00 PM - 10:00 PM	After Awards Reception	Exhibit Hall B

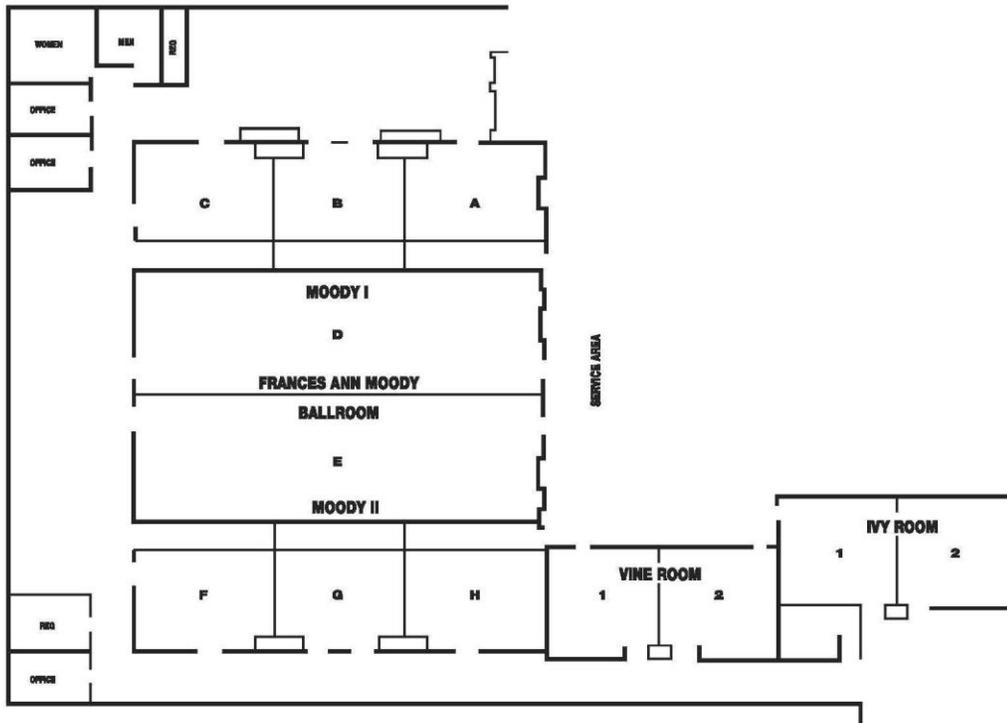
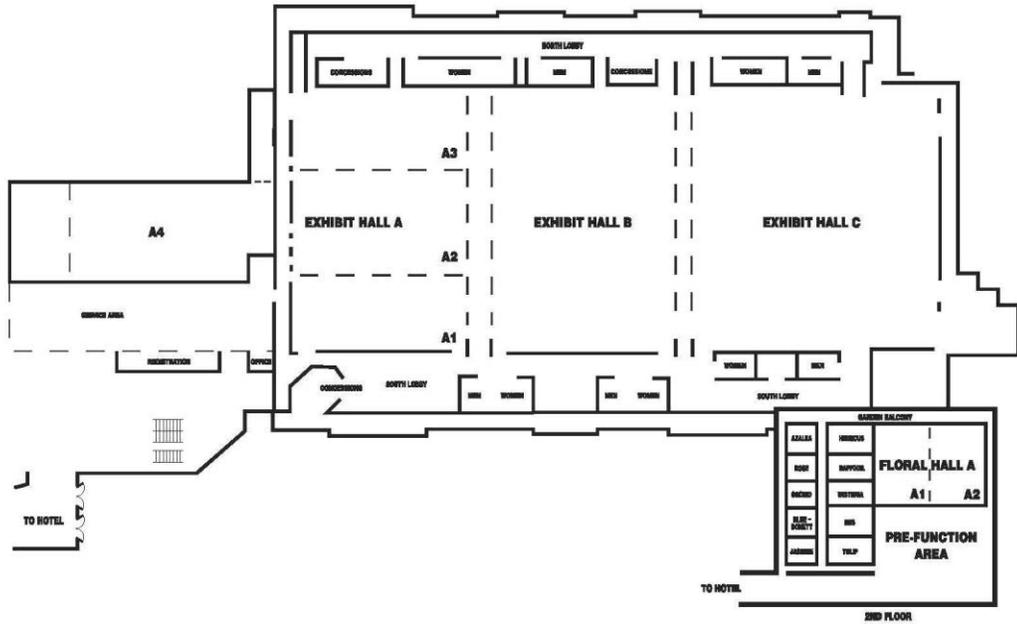
Saturday, February 21, 2026

6:00 AM - 11:00 AM

Check Out

Lobby

MOODY GARDENS CONVENTION CENTER



Margins Matter: Wildlife on the Edge in a Changing Texas

2026 Texas Chapter of The Wildlife Society Conference Plenary

Wednesday February 18th, 2026 – 5:00pm – 7:30pm

The plenary session highlights the ecological significance of species and landscapes shaped by geographic boundaries, changing land use, and shifting human populations across the state. The theme centers on regions where wildlife faces unique management challenges and opportunities. As Texas continues to change rapidly, understanding and conserving wildlife on the margins is essential to sustaining resilient ecosystems and biodiversity statewide. Experts will share lessons learned and strategies for navigating conservation challenges where landscapes, people, and wildlife intersect at the margins.

Conservation Challenges and Opportunities in the Trans-Pecos, Texas



Dr. Louis Harveson, Associate Provost of Research and Development, Sul Ross State University and Dan Allen Huges Endowed Director, Borderlands Research Institute

Louis Harveson is founder and director of the Borderlands Research Institute at Sul Ross State University. His research focuses on wildlife conservation and natural resource management in the Texas-Mexico borderlands, with an emphasis on private

lands, applied solutions, and mentoring graduate research. He also serves on numerous regional, statewide, and national conservation committees and holds leadership roles in the Texas Wildlife Association and the Boone and Crockett Club.

Looking to the Past to Inform the Future: Changing Landscapes for Wildlife and Humans on the High and Rolling Plains of Texas



Dr. Warren Conway, Bricker Endowed Chair in Wildlife Management; and Senior Director, Outstate Research, Engagement & Outreach Stations; Texas Tech University

Warren Conway is a Professor and Senior Director of Research, Education, and Outreach Stations at Texas Tech. With more than 30 years of experience, his work centers on applied, solution-driven wildlife research across Texas. His current focus is on collaborative research and land stewardship to manage and restore range and ranchlands for wildlife, water resources, and Texas's ranching heritage.

Coastal Prairies and Marshes, the Value in Margins



Kirk Feuerbacher, Working Lands Project Director, The Nature Conservancy-Texas

Kirk Feuerbacher serves as the Working Lands Project Director for The Nature Conservancy - Texas Chapter. His background is in wildlife ecology and ranch management, and his work focuses on promoting land protection and management for ecological and economic sustainability by identifying resource value and promoting realistic management for long term conservation.

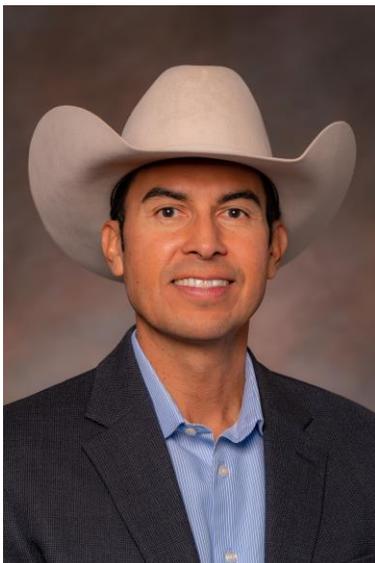
Urban Ecosystem Thrives in the Margins: Engaging with Nature and the Community



Sam Kieschnick, Urban Wildlife Biologist, Dallas/Fort Worth, Texas Parks and Wildlife Department

Sam Kieschnick is an urban wildlife biologist with extensive experience in environmental education, natural resource interpretation, and botany across North Texas. He holds a master's degree from Tarleton State University, and his work emphasizes awareness, appreciation, and action in urban wildlife conservation.

Where will our Future Wildlife Biologist Come From?



Dr. Fidel Hernández, Sue and Radcliffe Killam Endowed Chair for Wildlife, Livestock and Habitat Interactions at TAMU-Kingsville and the Caesar Kleberg Wildlife Research Institute; President of The Wildlife Society

Fidel Hernández is a Regents Professor at TAMU-Kingsville and the Caesar Kleberg Wildlife Research Institute. His research advances rangeland and wildlife conservation across southern Texas and northern Mexico, addressing habitat management, invasive species control, and upland gamebird policy. He also serves in leadership and advisory roles for the East Foundation and Texas Parks and Wildlife Department.

Wednesday, February 18, 2026

Student Poster Competition

Exhibit Hall A1 & A2, February 18, 2026

4:00 PM – 5:15 PM

1. **Into the Shadows: GPS-Video Collar Footage Uncovers Factors Influencing Desert Bighorn Sheep Use of a Thermal Refuge**
Dylan Stewart, E. Alejandro Lozano-Cavazos, Stephen Webb
2. **Identifying Nesting Attempts of Northern Pintail Outside the Primary Breeding Areas**
Ashley Cano-Johnson, Joseph McGovern, Jack Rogers, Jessica Johnston, Emma Weber, Bart Ballard
3. **Effects of Experimental Venue on Chinese Tallow Leaf Litter Decomposition: Implications for Wetland Research**
Ane Elizondo, Caleb Mullins, Cord Eversole
4. **High Output, High Impact: Reproductive Ecology of Wild Pigs in Southcentral Oklahoma**
Abigail Dwelle, Stephen Webb, James Beasley, Sarah Chinn
5. **Vegetation Characteristics and Seasonal Activity Patterns of Plains Spotted Skunks in South Texas Rangelands**
Lee Cottle, Cord Eversole, Jessica Glasscock, Reuber Antoniazzi, Scott Henke, Duston Duffie, Gabriel Andrade-Ponce
6. **Evaluating The Effects of Grazing Practices on Forage Production, Cover, Species Composition, and Soil Moisture in The Marfa Grasslands, Texas**
Ty Goodwin, Lalo Gonzalez, Justin French, Silverio Avila
7. **Avifaunal Response to Restoration of Small, Isolated Prairies**
Katie Fraser, Christopher Schalk, Josh Pierce, Richard Schaefer, Jessica Glasscock, Cord Eversole
8. **Surviving the Storm: Impacts of the Gulf Coast Blizzard on Overwintering Wilson's Snipe**
Kevin Perozeni, Ashley Long
9. **Optimizing Acoustic Monitoring: Detection Distance Insights for Bird Surveys in South Texas**
Kasey Pirkle, Alexander Hoxie, Andrea Montalvo, Ashley Long

10. **Tiny Plastics, Hidden Pathways: Investigating Exposure and Ingestion in Songbird Nestlings**
Gracie Triplett, Lindsey Willingham, Alexander Hoxie, Addison Singleton, Rajani Srinivasan, Britt Heidinger, Adam Mitchell, Heather Mathewson
11. **Spatial Distribution of Sympatric Owl Species in South Texas**
Claire Molina, Andrea Montalvo, Lindsay Martinez, Jane Kunberger, Ashley Long
12. **Comparing Estimated Avian Species Richness Between Point Counts and Autonomous Recording Units**
Alexander Hoxie, Jane Kunberger, Andrea Montalvo, Michael Morrison, Ashley Long
13. **Optimizing Chemical Immobilization in Collared Peccary: Recovery Patterns and the Value of Supplemental Oxygen**
Edward Tomassetti, Logan Thomas, Walter Cook, Marcus Blum, Jacob Dykes, Whitney Gann, Stephen Webb
14. **White-Tailed Deer Activity and Wildlife Community Diversity in Urban Park Ecosystems of South Texas**
Cintya Medina Rangel, Karla Pedraza, Alexandra Ash, Israel Adame, Vijayan Sundararaj
15. **Initial Results of Avian Surveys on a Sustainably-Managed, Working Ranch in North Texas**
Callie Cartwright, Courtney Ramsey, Warren Conway
16. **Urban Stream Habitat Assessment and Restoration Implications for Wildlife in the Boggy Creek Watershed**
Alannah Roberts, Sara Moren, Beth Silvy, Roel Lopez
17. **Evaluating Remote Sensing Platforms for Wildfire Burn Severity in Semi-arid Grasslands: the 2024 Texas Panhandle Fires**
Valeria Enciso, Conner Ties, Humberto Perotto, Morgan Treadwell, Riley Alvarez, Xavius Ortiz
18. **Preliminary findings on habitat preferences of Davis Mountain cottontails (*S. holzerni robustus*)**
Hannah Shapiro, Cole Wzientek, Alynn Martin, and Dana Karelus
19. **Evaluating Ground-Dwelling Arthropod Interactions Following Plant Invasion in a New England Maritime Grassland**
Tyler McMahon, Jake Davis, Heather Mathewson, Adam Mitchell
20. **The Effects of Urbanization on Post-Breeding Movement of White-Winged Doves**

Mari Wharff, Megan Spina, Bart Ballard, Owen Fitzsimmons, Jennifer Smith

21. **Functional Community Responses to Extreme Weather Events Using a Long-Term Dataset**
Zoe Mabry, Joseph McGovern, Levi Sweeten, Maya Donkor, Chisum Green, Charles Thompson, Elgon Watson, Zachary Mitchell
22. **Drought Impact Assessment on Freshwater Communities: Responses of South Texas Crayfish**
Zoe Mabry
23. **Efficacy of Managing Invasive Japanese Knotweed on Arthropod Biodiversity in a Maritime Grassland**
Naomi Zahn, Adam Mitchell, Heather Mathewson
24. **Temporal Partitioning of Supplemental Resources Use Between Native and Invasive Ungulates in West Texas**
Hunter Oliver, Cord Eversole, Gabriel Andrade-Ponce, Reuber Antoniazzi, Jessica Glasscock
25. **Novel Drivers of Nest-Site Selection in Texas Horned Lizards**
Kira Gangbin, Madison Upton, Julianne Li, Brian Wright, Dean Williams
26. **What's on the Menu? GPS-Video Collars Provide Insight into the Diet of Desert Bighorn Sheep**
Lauren Duncan, Tyler Hutchinson, Dylan Stewart, E. Alejandro Lozano-Cavazos, Stephen Webb
27. **Projected Distribution of the Common Warthog (*Phacochoerus africanus*) and Implications for African Swine Fever in North America**
Truman Gilliam, Chris Butler, Meriam Saleh, Dee Ellis
28. **Influence of Vegetation Characteristics on Wildlife Species Richness and Occurrence in a Natural Area in Texas**
Rider Combs, Humberto Perotto-Baldivieso, Ashley Long, Ty Werdel
29. **Seeing is Believing! Use of GPS-Video Collars to Quantify Activity Budgets of Desert Bighorn Sheep**
Tyler Hutchinson, Lauren Duncan, Dylan Stewart, E. Alejandro Lozano-Cavazos, Stephen Webb
30. **Wildlife Damage at Livestock Guardian Dog Feeding Stations: Effective Strategies to Reduce Food Loss**
Grant Rogers, Andrew Kasner
31. **Comparing Small Fauna Communities Between Agrivoltaic Systems and Native Grasslands**

Daniel Ramirez, Stacy Hines, Ty Werdel, Nuria Gomez-Casanovas, Morgan Treadwell, Humberto Perotto-Baldivieso

32. **Assessing the Status of Owl Populations in Texas**
Victoria Langham, Andrew Gregory, James Bednarz
33. **Resolving the Phylogenetic Status of Salamanders with Markedly Different Responses to Supersaturation**
Jaiden Wilson, Ciara Moroney, Trent Furr, Ryan Shartau, Matthew Greenwold
34. **Evaluating Biomass Recovery Post Large-scale Wildfire in the Texas Panhandle: A Tale of Two Fires**
Xavius Ortiz, Conner Ties, Morgan Treadwell, Riley Alvarez, Valeria Enciso, Humberto Perotto
35. **Hormones, Highways, and the Road Ahead: Genomic Insights into Behavior and Survival of South Texas Wild Cats**
Denay Hernandez
36. **Species-Specific Responses of Bats to Moon Illumination in Texas**
Case Henson, Sarah Fritts
37. **Detecting Emergent Macartney Rose Using Very Fine Resolution Imagery**
William Longoria
38. **Scouting for Science: Citizen Hunters and AI Acoustic Tools in Avian Research**
Nora Regan, Jessica Glasscock, Reuber Antoniazzi, Robert Sanders
39. **Observations of Tree Swallows Using Bird Boxes on Fishers Island Restored Maritime Grassland**
Francisco Salgado, Tyler McMahon, Heather Mathewson, Adam Mitchell
40. **Comparing High-Cost and Low-Cost Thermal Imagers for North Texas Bird and Bat Detection**
Jasmine Gonzalez, Joshua Morales, Shyann Sanchez, Willow Fox
41. **Influences of Pinyon–Juniper and Sagebrush Fuel Reduction Treatments on mammal communities of sagebrush-steppe systems in Central Utah**
Katie Pennartz, Evan Tanner, Michael Cherry, Jennifer Frey, Levi Heffelfinger
42. **Comparison of Active and Passive Avian Monitoring Methods at a Solar Facility and Reference Site in Texas**
Maria Ramirez, Emily Stelling, Madison Nadler, Sarah Fritts, Leroy Walston

43. **Is Interference Competition Heating Up? Assessing the Effects of Patch-Burning on Sympatric Herbivores in a Guinea Grass-Dominated System**
Grace Sagebiel, Evan Tanner, Ashley Tanner, Daniel Woolsey, Sandra Rideout-Hanzak
44. **Mapping Bat Diversity: Spatial Patterns of Species Richness and Activity in the Lower Rio Grande Valley**
Shyann Sanchez, Kati Wall
45. **Ecological Restoration of Thornforests Following Cropland Abandonment: A Chronosequence Analysis**
Raziel Flores, Ashley Tanner, Evan Tanner
46. **Insights into the Temporal and Spatial Segregation Between Brown and Spotted Hyenas in Botswana**
Adam Hernandez, Max Larreur, Christopher Comer, Daniel Scognamillo
47. **Utilization of Urban Greenspaces by Feral Hogs in 2024 in Denton County, Texas**
Erika Suarez, Issabella Serrani Gallego, Andrew Gregory
48. **Winter Bird Occurrence and Land Cover Change Along the Texas and Louisiana Coast**
Karen Hondrick, Warren Conway, Cade Coldren, Chao Xu, Courtney Ramsey
49. **Nest-Site Selection and Movement Patterns of Translocated Female Eastern Wild Turkeys in the Post Oak Savannah of Texas**
Laken Mize, Warren Conway, Cade Coldren, Kyle Hand, Courtney Ramsey, Jason Hardin
50. **Developing Habitat Availability Models for Bumble Bees in Texas Based on Availability and Seasonality of Floral Resources**
Hannah Atkinson, Ryan Ament, Ty Cospers, Addison Singleton, Adam Mitchell, Heather Mathewson
51. **Restoration of Oil and Gas Pads in the Permian Basin of West Texas**
Kendall Christensen, Silverio Avila, Lalo Gonzalez, Antonio Cantu, Julie Myers
52. **Changes in Vegetation Attributes and Avian Species Diversity Following Herbicide Application to Manage Honey Mesquite**
Shaelyn Rainey, Aaron Norris, Cade Coldren, Caitlyn Cooper-Norris, Alice Mathew, Jesse Haudrich

53. **UAV and GPS Applications for Understanding Scaled Quail Habitat in the Chihuahuan Desert**
Luke Christensen, Lalo Gonzalez, Silverio Avila, Antonio Cantu
54. **Predator Overlap at Artificial Water Sources in South Texas**
Hunter Vasquez, Michael Tewes, Elizabeth Grunwald, Rupesh Maharjan, Joelysa Garcia
55. **Monitoring Avian Biodiversity in the Lower Rio Grande River Valley Using Passive Acoustic Monitors**
Carmen Burkett, Sara van der Leek, Jackson Maddox, Alyssa Herrera
56. **Spatial Overlap at Artificial Water Sources in South Texas**
Joelysa Garcia, Hunter Vasquez, Michael Tewes, Spencer Ferguson, Elizabeth Grunwald, Rupesh Maharjan
57. **Types of Adaptive Bird Feeding Equipment Used by Individuals with Disabilities**
Carlos Dubon Hinojosa

Thursday, February 19, 2026

Clarence Cottom Award Presentations

Exhibit Hall B, Feb 19, 2026

9:30 am – 12:00 pm.

Moderator: Silverio Avila

- 9:30 **Understanding Drivers of Population Performance of White-Tailed Deer in South Texas**
Kevin Lovasik, Miranda Hopper, Bryan Spencer, Randy DeYoung, Aaron Foley, Poncho Ortega, David Hewitt, Landon Schofield, Tyler Campbell, Michael Cherry
- 9:50 **Survey Methodology and Population Estimate for the Texas Kangaroo Rat**
Derek Malone, Clint Boal, Dana Karelus, Carlos Villalobos, Richard Stevens, Brent Bibles
- 10:10 **Genomic Insights into Endangered Ocelot Populations to Inform Species Recovery**
Tyler Bostwick, Randy DeYoung, Matthew Smith, Ashley Reeves, Alynn Martin, Lisanne Petracca
- 10:30 **Use of Dirt Livestock Tanks by Migrating and Wintering Birds in Chihuahuan Desert Grassland and a Comparison of Survey Methods**
Emily Blumentritt, Justin French, Daniel Collins, Maureen Frank
- 10:50 **Spring Migration Strategies are Linked to Behavioral Thermoregulation in Northern Pintails**
Joseph McGovern, Evan Tanner, Georgina Eccles, Kevin Kraai, Daniel Collins, Paul Link, Cory Overton, Michael Casazza, Joseph James, Mason Cline, Clayton Hilton, Bart Ballard
- 11:10 **Using Animal Movement Models and Contact Networks to Understand Potential Spillover Routes Between Two Sympatric Felid Species**
Alexandria Hiott, Alynn Martin, Mason Fidino, Clayton Hilton, Ashley Reeves, Matthew Smith, Lisanne Petracca

Conservation & Ecology of Mammals I

Salon F & G, Feb 19, 2026

1:30 pm – 3:00 pm

Moderator: Rachel Richter

- 1:30 **Spatial Ecology of the Carmen Mountain White-Tailed Deer in the Serranías del Burro Mountains, Coahuila, Mexico**
Ivan Lozano, E. Alejandro Lozano-Cavazos, Stephen Webb
- 1:45 **Movement Ecology and Interspecific Interactions of a Novel Elk Population in Texas**
Austin Ibarra, Ashlyn Halseth-Ellis, Michael Cherry, Warren Charles, Randy DeYoung, Justin French, Shawn Gray, Levi James Heffelfinger
- 2:00 **Movement and Social Responses of Aoudad and Mule Deer to Population Management Efforts**
Andrew Dotray, Justin French, Carlos Gonzalez, Levi James Heffelfinger, Shawn Gray
- 2:15 **Maternal Selection of Fawn-rearing Habitat in an Agricultural Matrix and Implications for Pronghorn Neonate Survival**
Marlin Dart, Matthew Turnley, Celine Rickels, Derek Hahn, Evan Philip Tanner, W. Sue Fairbanks, Colter Chitwood, Robert Lonsinger, Levi James Heffelfinger, Randy DeYoung, George Wang, Michael Cherry
- 2:30 **Environmental and Anthropogenic Drivers of Pronghorn Home-range Size in the Southern Shortgrass Prairie**
Grace Sagebiel, Brianna Imel, Celine Rickels, Evan Philip Tanner, Michael Cherry, Matthew Turnley, Derek Hahn, W. Sue Fairbanks, Colter Chitwood, Robert Lonsinger, Levi James Heffelfinger, Randy DeYoung, George Wang, Marlin Dart
- 2:45 **Influence of Wildfires, Forest Restoration, and Predation Risk on Elk Habitat Selection in North-Central New Mexico**
Sharon Valverde, James Cain, III, Warren Charles Conway

Conservation & Ecology of Birds I

Vine 1 & 2, Feb 19, 2026

1:30 pm – 3:00 pm

Moderator: Alex Hoxie

- 1:30 **Differential Effects of Temperature and Drought on the Survival of Sympatric Quail Species in a Semiarid Environment**
Levi Sweeten, Evan Philip Tanner, Ashley Tanner, Caleb McKinney, Katherine Travis, Maydeliz Ramos, Fidel Hernandez, Leonard Brennan
David G Hewitt, Ryan Luna, John McLaughlin, Humberto Perotto, Lisanne Petracca
- 1:45 **Northern Bobwhite Survival Post Hunting-party Interactions**
Amanda Montemayor, D. Abe Woodard, and Fidel Hernandez
- 2:00 **Assessing the Effectiveness of Camera-trap Distance Sampling for Quail Abundance and Density at RPQRR**
Sean Blatstein, Dan Foley
- 2:15 **Effects of Invasive Guinea Grass on the Space Use of Northern Bobwhites in South Texas, USA**
Benjamin Oswald, Aaron Foley, Jennifer Smith, Aditya Singh, David G Hewitt
- 2:30 **Northern Bobwhite Space Use Immediately Following Prescribed Fire**
Carolina M Munoz, Fidel Hernandez, Abe Woodard, Jennifer Smith, Kristyn Grace Stewart-Murphy
- 2:45 **Colonization and Extinction Dynamics of Chestnut-Bellied Scaled Quail and Associated Species in Tamaulipan Thornscrub**
Maydeliz Ramos, Levi Sweeten, Caleb McKinney, Katherine Travis, Ashley Tanner, Evan Philip Tanner, Jennifer Smith, Fidel Hernandez, Caleb Roberts, David G Hewitt, Leonard Brennan, John McLaughlin, Humberto Perotto-Baldivieso

New Technology & Applications

Salon B, Feb 19, 2026

1:30 pm – 3:00 pm

Moderator: Antonio Cantu

- 1:30 **Thermal Drones as a Tool for Crocodylian Nest Detection: A Field Assessment in American Alligators (*Alligators mississippiensis*)**
Brandon Gross, Jonathan Warner, Victoria Williams, Ethan Menzel, I-Kuai Hung, Cord Eversole
- 1:45 **Applications of GIS: Forage Productivity and Pastureland of Texas**
Kelley Mundy, Humberto Perotto, X. Ben Wu, Jeff Goodwin, Merilynn Schantz, Morgan Treadwell
- 2:00 **Short-term Rainfall Events and their Role in Shaping Vegetation Cover Structure in a Semi-arid Rangeland**
Kylie Faith Perez, Humberto Perotto, Conner Ties, Rider Combs, Sorin Popescu, Jacob Lucero, Morgan Treadwell, Ty Werdel, Bethany Boggan, Jeff Goodwin
- 2:15 **Developing Multiple-Scale Validation Tools to Quantify Forage Production in Rangeland Ecosystems**
Mollie Kemp, Silverio Avila-Sanchez, Sorin Popescu, Andres Cibils, Sarah McCord, Conner Ties, Shanna Rae Gleason, Nuria Gomez-Casanovas, William E. Pinchak, Humberto Perotto-Baldivieso
- 2:30 **The Good, the Bad, and the Ugly: Comparison of GPS Collar and Solar-Powered Ear Tag Technologies for Animal Tracking**
Dylan Stewart, Egleu Mendes, Thomas Batter, Jared Beaver, Marcus Blum, Mike Cox, Jacob Dykes, MacKenzie Hoffman, Kaitlyn Piecora, Luis Tedeschi, Edward Tomassetti, Smith Wells, Ty Werdel, Stephen Webb
- 2:45 **Seed-Spec: A Native Seed Blend Development Tool**
Brian Hays

Wildlife Diseases & Toxicology I

Ivy 1 & 2, Feb 19, 2026

1:30 pm – 3:00 pm

Moderator: Claire Molina

- 1:30 **Patterns of Prevalence and Behavioral Responses to *Toxoplasma gondii* in White-tailed Deer in Southern Texas**
Kendall Bancroft, Alynn Martin, Tyler Campbell, Randy DeYoung, Aaron Foley, Whitney Hansen, David G Hewitt, Miranda Hopper, Kevin Lovasik, Poncho Ortega, Landon Robert Schofield, Bryan Spencer, Jason Sawyer, Michael Cherry
- 1:45 **Prevalence of Anticoagulant Rodenticides in Mesocarnivores in a Rangeland Ecosystem**
Victoria Locke, Clayton Hilton, Ashley Reeves, Evan Philip Tanner, Julie Young, Lisanne Petracca
- 2:00 **Impacts of Imidacloprid Exposure on Ring-necked Pheasant Growth and Survival**
Madison Ramsey, Courtney Ramsey, Warren Charles Conway
- 2:15 **Exploring Breeding Birds as Bioindicators of Plastic Pollution in San Antonio, Texas**
Mariel Ortega, Jennifer Smith
- 2:30 **Early Results from a Medicated Feed Study to Reduce Eye and Cecal Worm Infestations in Northern Bobwhite Quail**
Ryan O'Shaughnessy, Dan Foley, Mitchell Riggs, Kyndal Underwood

Conservation & Ecology of Mammals II

Salon F & G, Feb 19, 2026

3:15 pm – 4:30 pm

Moderator: Daniel Kunz

- 3:15 **Effects of the Border Barrier System on Movement Behavior of a Large Carnivore**
Chloe Nouzille, Katherine McDaniel, Robert Alonso, David G Hewitt, Grant Harris, Dana Karelus, Claudia Wultsch, Randy DeYoung, Levi James Heffelfinger, Clayton Hilton, Michael Cherry, Lisanne Petracca
- 3:30 **Barriers in the Brush: How Roads Shape Bobcat Movement and Connectivity**
Sean Kiernan, Simona Picardi, Emma Brookover, Elizabeth Grunwald, Terry Hanzak, Thomas Langschied, Daniel Scognamillo, Jack Towson, Thomas Yamashita, John H Young, Michael Tewes
- 3:45 **Relative Habitat Suitability of the Gray Fox (*Urocyon cinereoargenteus*) in the Central Great Plains**
Daniel Benson, Andrew George, Adam Ahlers, Emma Buckardt, Io Christine Rega-Brodsky
- 4:00 **Habitat Selection by Gray Wolves on the Kenai Peninsula in Southcentral Alaska**
Seth Hawke, Warren Charles Conway, Courtney Ramsey, David Saalfeld
- 4:15 **Assessment of Visual and Scent Lures as Successful Capture Methods for Felids and other Mesocarnivores**
Meghan Murphy, Ashley Reeves, Landon Schofield, Georgia Kate Harris, Aidan Branney, Jason Sawyer, Lindsay Martinez, Alynn Martin

Conservation & Ecology of Birds II

Vine 1 & 2, Feb 19, 2026

3:15 pm – 4:30 pm

Moderator: Audrey Taulli

- 3:15 **Resource Selection of White-winged Doves Breeding Across an Urban Gradient in Texas**
Megan Spina, Owen N Fitzsimmons, Jordan Giese, Marianna Wharff, Jennifer Smith
- 3:30 Withdrawn
- 3:45 **Comparative Habitat Analyses for Co-Occurring Texas Raptor Species: Zone-tailed Hawks, Gray Hawks, and Common Black Hawks**
Sarah Montalvo, Will Britton, Clint Boal, Brent Bibles, Tania Zarrin Homayoun
- 4:00 **Using Automated Recording Units to Estimate Habitat Availability and Occupancy of Mexican Spotted Owls in Texas**
Clint Boal, Brent Bibles
- 4:15 **Temporal Distribution of High-Elevation Owls in the Davis Mountains, Texas**
Shelby duPerier, Romey Lynn Swanson, Justin French, Maureen Frank

Wildlife Diseases & Toxicology II

Ivy 1 & 2, Feb 19, 2026

3:15 pm – 4:30 pm

Moderator: Hannah Shapiro

- 3:15 **Modeling Chronic Wasting Disease Transmission among Deer and Elk in the Texas Panhandle**
Ashlyn Halseth-Ellis, Alynn Martin, Austin Ibarra, Michael Cherry, Warren Charles Conway, David G Hewitt, Walter Cook, Randy DeYoung, Justin French, Shawn Gray, Levi James Heffelfinger
- 3:30 **You Belong in My Network—A Novel Approach to Understanding *M. ovi* Transmission in Texas**
Angela Patrick, Warren Charles Conway, Justin French, Courtney Ramsey
- 3:45 **Potential for *Mycoplasma ovipneumoniae* Viability in a Freshwater Environment**
Chris Carter, Warren Charles Conway, Justin French, Courtney Ramsey, Patricia Brewster
- 4:00 **Efficacy of MedGene Vaccine to Combat Rabbit Hemorrhagic Disease Virus 2 in Wild-caught Cottontails**
Cole Wzientek, Hannah Shapiro, Dana Karelus, Angela Bosco-Lauth, Scott Henke, Alynn Martin
- 4:15 **Demographic Factors and Seroprevalence of Protoparvovirus and Distemper in Mesocarnivores of Southern Texas**
Mauricio Rued, Alynn Martin, Lisanne Petracca, Michael Tewes, Ashley Reeves, Christopher Kozakiewicz

Conservation & Ecology of Reptiles & Amphibians

Salon F & G, Feb 19, 2026

3:15 pm – 4:30 pm

Moderator: Erin Wehland

- 3:15 **Habitat Preferences of the Plateau Spot-tailed Earless Lizard (*Holbrookia lacerata*)**
Kathryn Steffen, Danielle Walkup, Toby Hibbitts, Douglas Tolleson, Sorin Popescu, Paul Crump, Wade Ryberg
- 3:30 **Modeling Functional Habitat Networks for Texas Indigo Snakes along the U.S.-MX Border in South Texas**
Samantha Dillon, Logan Wirth, Reece Allen, Wade Ryberg, Toby Hibbitts, X. Ben Wu, Danielle Walkup
- 3:45 **Interactive Effects of Resource Gradients and Environmental Stressors on Amphibian Oviposition Site Selection**
Caleb Mullins, Christopher Schalk, Daniel Saenz, Matthew McBroom, Reuber Antoniazzi, Gabriel Andrade-Ponce, Cord Eversole
- 4:00 **Top Predators, Depth, and Seasons Drive Patterns of Tadpole Diversity in Artificially Constructed Ponds**
Tatiana Suarez Joaqui, Daniel Saenz, Cory Adams, Toby Hibbitts, Kathryn R. Kidd, Reuber Antoniazzi, Cord Eversole, Carmen Montana, Christopher Schalk

Friday, February 20, 2026

Natural Resources Management I

Salon B, Feb 20, 2026

9:00 am – 10:00 am

Moderator: Sarah Goodman

- 9:00 **America's Best Idea, Impaired: Wild Pig Expansion and Management Across the National Park Service**
Anna Racey, John Tomecek
- 9:15 **Evaluation of Common Trap Types for Capturing Wild Pigs**
Charles Taylor, James Beasley, Lauren Buxton
- 9:30 **Utilizing Camera Trap and Scat Detection Dog Data for Multi-site Abundance Estimation**
James Helferich, Randy DeYoung, Beth Gardner, Landon Robert Schofield, Lisanne Petracca
- 9:45 **Mule Deer in the Trans-Pecos: Using Satellite Technology for Habitat Monitoring**
Kevin Patrick LeGrow, Justin French, Carlos Gonzalez, Shawn Gray

Conservation & Ecology of Mammals III

Salon F & G, Feb 20, 2026

9:00 am – 10:00 am

Moderator: Meghan Riley

- 9:00 **Dispersal Patterns of a Recolonizing Population of Black Bears in Texas**
Caitlin Camp, Justin French, Nicole Ann Dickan, Amanda M. Veals Dutt, Levi James Heffelfinger, David G Hewitt, Louis Harveson
- 9:15 **Using Simulated Movement Paths to Assess the Performance of Spatially Explicit Capture-recapture Study Designs for Estimating Abundance of Black Bears in the Trans-Pecos, Texas**
Matt Hewitt, Justin French, Dana Karelus, Amanda M. Veals Dutt, Warren Charles Conway, Louis Harveson
- 9:30 **Temporal and Environmental Drivers of Mesocarnivore Capture when Targeting Ocelots in South Texas**
Haylee Pearce, Tyler Campbell, Meghan Murphy, Ashley Reeves, Lindsay Martinez, Alynn Martin, Landon Schofield, Jason Sawyer
- 9:45 **Selection for Resource Stability Differs Among Sympatric Carnivores During Drought**
Matthew Smith, Ashley Reeves, Daniel Scognamillo, Michael Tewes, Lisanne Petracca

Conservation & Ecology of Birds III

Vine 1 & 2, Feb 20, 2026

9:00 am – 10:00 am

Moderator: Jordan Giese

- 9:00 **Beach-nesting Bird Conservation on the Upper Texas Coast**
Sarah Belles, Anna Deichmann
- 9:15 **The Waterbird Colony Island Network Design and Implementation (CINDI) Project as a Tool for Guiding the Rehabilitation of Texas Colony Islands**
Dale Gawlik, David Essian, Jessica Magolan, Liam Wolff, James Gibeaut, David Newstead, Bart Ballard, Matthew Streich, Jordan Giese
- 9:30 **A Wild Egret Chase: Disentangling the Impacts of Vegetation Communities on Urban Rookery Presence and Effects of Rookeries on Vegetation Communities**
Daniel Guerra, Uriel Eddy, Joseph Plappert, Davida Smyth, Clay Green
- 9:45 **Patterns in Migratory and Wintering Behavior of Three Texas Colonial Waterbird Species**
Presley Griffin, Joseph Michael McGovern, Bart Ballard, Jordan Giese

Urban Wildlife

Ivy 1 & 2, Feb 20, 2026

9:00 am – 10:00 am

Moderator: Jessica Alderson

- 9:00 **Bird City Texas: Campus Edition**
Natasia Moore
- 9:15 **Wildlife Survey on Houston's Urban Land Bridge Reveals Temporal Partitioning Among Mesopredators**
Michael Iacampo, Ann Cheek, Courtney Hall
- 9:30 **Why Did the Cat Cross the Road? Exploring the Genomic Link Underlying Decision-Making Behavior in Wild Cats**
Jack Towson, John H Young, Emma Brookover, Brian Davis, Jan Janečka, Lucas Spetic da Selva, Michael Tewes
- 9:45 **Spatial Distribution of Urban Coyotes is Influenced by Prey Abundance and Forest Cover**
Ann Cheek, Courtney Hall, Michael Iacampo, Mailin Castro, Valentina Urdaneta-Hernandez, Jackson Berg, Julia Cabello, Julia Samuel, Abigail Rothschild, Mariah Velez, Carolina Rodriguez, Quynh Le, Dino Rodriguez, Alora Robinson, Tyler Sattaur

Conservation & Ecology of Mammals IV

Salon F & G, Feb 20, 2026

10:15 am – 12:00 pm

Moderator: Ashlyn Halseth

- 10:15 **Genetic Status and Connectivity of Transboundary Region Mountain Lion Populations**
Katherine McDaniel, Chloe Nouzille, Robert Alonso, Randy DeYoung, Matthew Smith, David G Hewitt, Levi James Heffelfinger, Clayton Hilton, Dana Karelus, Grant Harris, Michael Cherry, Lisanne Petracca
- 10:30 **Unfriended and Reconnected: Social Integration and Seasonal Shifts in Group Dynamics of Translocated Desert Bighorn Sheep**
Dylan Stewart, E. Alejandro Lozano-Cavazos, Stephen Webb
- 10:45 **Not All Who Wander Are Lost: Unraveling Movement and Settlement Behavior of Translocated Rocky Mountain Bighorn Sheep**
Autumn Patterson, Dylan Stewart, Chad Lehman, Teresa Frink, Jon Jenks, John Kanta, Ty Werdel
- 11:00 **Habitat Use and Movement of Collared Peccaries Associated with the Barrier Along the International Border**
Emily Masterton, Edward Tomassetti, Daniel Benson, Abigail Dwelle, Walter Cook, Jacob Dykes, Whitney J Gann, Stephen Webb, Marcus Blum
- 11:15 **Using Helicopter Surveys to Assess Habitat Use of Collared Peccary in Southern Texas**
Abigail Dwelle, Stephen Webb, Daniel Benson, Emily Masterton, Edward Tomassetti, Marcus Blum, Walter Cook, Jacob Dykes, Paul Lukacs, Whitney J Gann
- 11:30 **Fifty Years in the Making: Revisiting Collared Peccary Demographics in Southern Texas**
Edward Tomassetti, Daniel Benson, Abigail Dwelle, Emily Masterton, Marcus Blum, Walter Cook, Jacob Dykes, Paul Lukacs, Ehsan Moqanaki, Whitney J Gann, Stephen Webb
- 11:45 **Life in the Pasture: Establishing Baseline Behavior for Giraffes in a Multi-Species Setting**
Grace Soechting, Adam Eyres, Luke Linhoff, Molly Shea, Heather Alexis Mathewson

Conservation & Ecology of Birds IV

Vine 1 & 2, Feb 20, 2026

10:15 am – 12:00 pm

Moderator: Dan Collins

- 10:15 **The Effect of Annual and Seasonal Rainfall on Riparian Bird Communities in the Southern United States**
Gabriel Andrade Ponce, Alejandra Martinez, Selma N Glasscock, Christopher Schalk, Reuber Antoniazzi, Jessica Glasscock
- 10:30 **Applications of Network Ecology to Cackling Geese (*Branta hutchinsii*) Wintering in the Southern Great Plains**
Jack Rogers, Javier Segovia, Kevin Kraai, Daniel Collins, Jay VonBank, Jordan Giese, Bart Ballard
- 10:45 **Hunting Influences Waterfowl Activity in Texas Wetlands**
Emma Weber, Rachel Rae Fern, Bart Ballard, Jordan Giese
- 11:00 **Habitat Loss Results in Island-level but not Population-level Declines in Waterbird Nest Abundance over 16 years (2006-2021) on the Lower Coast of Texas**
David Essian, Liam Wolff, Jessica Magolan, James Gibeaut, David Newstead, Dale Gawlik
- 11:15 **Spatiotemporal Drivers of Energy Expenditure During the Nest Cycles of Three Colonial Waterbird Species**
Joseph Michael McGovern, Bart Ballard, David Essian, Dale Gawlik, Jordan Giese
- 11:30 **Foraging Behavior and Habitat Selection of Breeding Colonial Waterbirds on the Texas Coast**
Jordan Giese
- 11:45 **Rookery of Dreams: Consensus Building and Stakeholder Engagement in Pursuit of Sustainable Solutions to Human-egret Conflict**
Joseph Plappert, Daniel Guerra, Uriel Eddy, Davida Smyth, Clay Green

Natural Resource Management II

Salon B, Feb 20, 2026

10:15 am – 12:00 pm

Moderator: Derrick Wolter

- 10:15 **Cervid Population Trends and Foraging Behavior to Guide Forest Management Strategies Across the Continental United States**
Christopher Schalk, Daniel Herrera, Michael Cove
- 10:30 **Weather Whiplash Reshapes Soil Microbial Communities in Edwards Plateau**
Dakota Raine Moberg, Ashley Tanner, Evan Philip Tanner, Sanku Dattamudi
- 10:45 **Identifying Scalable Algorithms for Measuring Brush Impacts on Pronghorn Habitat at Ecoregion Scales**
Halli Lovell, Justin French, Levi James Heffelfinger, Shawn Gray, Carlos Gonzalez
- 11:00 **Woody Encroachment Effects on Breeding Grassland Birds in the Rolling Plains of Texas**
Alice Mathew, Shaelyn Rainey, Jesse Haudrich, Aaron Norris, Caitlyn Cooper-Norris, Warren Charles Conway
- 11:15 **Classifying Multiple Vegetation Cover Types Using Very Fine-scale Imagery**
Shanna Rae Gleason, William Longoria, Jacob Lucero, Javier Osorio Leyton, William Rogers, Humberto Perotto-Baldivieso
- 11:30 **Grassland Habitat for Pollinators under Various Mowing Regimes at Fort Davis National Historic Site**
Eliana Goodwin
- 11:45 **Landscape Level Vegetation Change in a Semi-Arid Rangeland Post a Large-Scale Wildfire**
Conner Ties, Morgan Treadwell, Mollie Kemp, Humberto Perotto, Kelley Mundy

Human Dimensions & Conservation Policy

Ivy 1 & 2, Feb 20, 2026

10:15 am – 12:00 am

Moderator: Micayla Pearson

- 10:15 **The Threat of Ferae Naturae to the North American Model**
Jake Hill
- 10:30 **Factors Inspiring Committed Collaboration for Wildlife in Texas**
Jared Messick, Christopher Serenari
- 10:45 **Stakeholder Perspectives of the Northern Bobwhite Decline in Texas**
Kristyn Grace Stewart-Murphy, Fidel Hernandez, Alejandra Olivera-Mendez,
Angela Guerrero, Jon Horne, Sabrina Szeto
- 11:00 **TPWD Update: Innovation and Resources for Wildlife Researchers:
Knowledge Gaps, Funding Priorities, and New Online Resources**
Richard D Heilbrun, Kelly Simon, Jonah W Evans, Jennifer Marrugo
- 11:30 **Generate Relevant, Fundable Research Topics and Conservation
Actions Using the State Wildlife Action Plan**
Kelly Simon

Conservation & Ecology – Mammals V

Salon F & G, Feb 20, 2026

10:15 am – 12:00pm

Moderator: Joseph McGovern

- 1:00 **Tri-Colored Bat Predation by a Dark Fishing Spider in East Texas**
Samantha Leivers, Elijah Lee, Nathan Fuller
- 1:15 **TMN Bat Acoustic Monitoring Program Seeks to Close the Knowledge Gap for Bat Species Distributions Across Texas**
Rachel Grotte
- 1:30 **Great Bat Bridge Survey: A Citizen Science Collaboration with TPWD and TXDOT**
Wendy E Anderson, Lauren Young, Samantha Leivers, Noah Ray, Craig Hensley
- 1:45 **Occupancy and Activity Patterns of Bats Vulnerable to Wind Energy in Texas**
Maria Ramirez, Madison Nadler, Madison Gover, Sarah Fritts
- 2:00 Coffee Break
- 2:15 **Little Eaters, Lasting Effects: Do Small-Mammals Shape Restored and Native Rangelands?**
Herbert Magobwe, Fidel Hernandez, Anthony Falk, Alejandro na Bazaldua, Kristyn Grace Stewart-Murphy, Benjamin Turner, Andrea Bruno Montalvo, John Herschberger, Logan Liesman
- 2:30 **A Definitive Test of the Habitat Requirements of the Texas Kangaroo Rat**
Maya Folkes
- 2:45 **Population Densities and Habitat Associations of Native and Exotic Ungulates in the Edwards Plateau of Texas**
Carsten Groos, Warren Charles Conway, Courtney Ramsey

Conservation & Ecology – Birds V

Vine 1 & 2, Feb 20, 2026

1:00 pm – 3:15 pm

Moderator: Meghan Riley

- 1:00 **Avian Diversity and Species Response to Ashe Juniper Mitigation along Riparian Corridors**
Cameron Starnes, Zachary Bellows, Heather Alexis Mathewson
- 1:15 **Avian Community Response to Removal of Encroaching Woody Vegetation in Trans-Pecos Grasslands**
Audrey Taulli, Maureen Frank, Carlos Gonzalez, Justin French
- 1:30 **Wild Turkey Populations Retain High Genetic Diversity and Connectivity Amid Regional Declines in the Edwards Plateau Ecoregion of Texas**
Clarissa Molina, Andrew Gregory
- 1:45 **Conservation Genomics in a Changing Landscape: Genetic Structure and Dynamics of Hybridization of Wild Turkey in Oklahoma**
Michael Barrett, Evan Philip Tanner, Randy DeYoung, R. Dwayne Elmore, Colter Chitwood, Craig Davis, Sam Fuhlendorf, Kent Andersson, Nicolle De Filippo, Cody Griffin, Cyrena Bedoian
- 2:00 Coffee Break
- 2:15 **Black-capped Vireo Habitat Associations and Thermal Microclimate Variability in Shrub Canopies in the Edwards Plateau**
Sarah Macha, James Giocomo, Tania Zarrin Homayoun, Ben Skipper, Andrew Kasner
- 2:30 **How Does Temperature Variation Across Latitudes Influence Early Songbird Development?**
Lindsey Willingham, Heather Alexis Mathewson, Britt Heidinger
- 2:45 **Bioaccumulation of Microplastics in Mississippi Kites**
Madison McGinnis, Scott Collins, Clint Boal
- 3:00 **Migratory Ecology of Wilson's Snipe**
Kevin Perozeni, Ashley Long

Conservation & Ecology of Wildlife Communities

Ivy 1 & 2, Feb 20, 2026

1:00 pm – 3:15 pm

Moderator: Sam Kieschnick

- 1:00 **Ecological Impacts of Light Pollution from Ground and Space: Sunlight on Demand a Literature Review**
Teznie Pugh, Steven Hummel
- 1:15 **A Systematic Review of Wildlife Research in Loblolly Pine Forests and Plantations**
Reuber Antoniazzi, Gabriel Andrade-Ponce, Andrew Moore, Karen Lorena Velasquez
- 1:30 **Pollinator Attractiveness and Ecological Value of Common Landscape Plants**
Addison Laine Singleton, Heather Alexis Mathewson, Adam Mitchell
- 1:45 **Influence of Invasive Vegetation on Habitat Associations and Community Composition of Small Vertebrates**
Duston R Duffie, Andrew Mullaney, Gabriel Andrade-Ponce, Fidel Hernandez, Scott Henke, Cord Eversole
- 2:00 Coffee Break
- 2:15 **Impacts on Wildlife Community Assemblage in the Borderlands of Southwest Texas from Anthropogenic Influences and Resource Availability**
Jesse Ellgren, Louis Harveson, Amanda M. Veals Dutt, Caitlin Camp, Justin French I
- 2:30 **Native Grassland and Habitat Restoration: From Agriculture to Costal Prairies**
John Herschberger

Noncompetitive/Professional Poster Competition

Exhibit Hall A2, February 20, 2026

4:00 PM – 5:30 PM

1. **Influence of Nest Substrate on Nesting Success of Northern Bobwhite and Scaled Quail at RPQRR**
Kyndal Underwood, Dan Foley, Ryan O'Shaughnessy, Mitchell Riggs
2. **Landowner Perceptions of Western Cattle-Egrets**
Johnette Zapalac-Janecka, Maureen Frank
3. **A systematic Review of Feral Swine Incidents and Response**
Jackson VerSteege, John Tomecek
4. **Relating Livestock Health and Wild Pigs on Rangelands**
Cheyenne Voorhies, Vienna Brown, Landon Robert Schofield, John Tomecek
5. **Assessing the Correlation Between Bobcat Presence, Prey Presence, and Surrounding Environment in South Texas**
Emma McMillian, Spencer Ferguson, Sean Kiernan, Jack Towson, Elizabeth Grunwald, Emma Brookover, Michael Tewes
6. **Bobcat and Canid Intraguild Competition at South Texas Wildlife Crossings**
Spencer Ferguson, Thomas Yamashita, John H Young, Rupesh Maharjan, Emma Brookover, Joelysa Garcia, Elizabeth Grunwald, Terry Hanzak, Denay Hernandez, Thomas Langschied, Emma McMillian, Hunter Vasquez
7. **Dung Beetle Diversity in Grazing Regimes of Desert Grasslands**
Christopher Mott, Carlos Gonzalez, Silverio Avila
8. **Status and Trends of Texas Horned Lizards in the United States From 2014 - 2024**
Javier Robledo, Scott Henke
9. **Exploring Genetic Connectivity of White-tailed Deer Using Radio Collars and DNA Analysis**
Megan Guerra, Randy DeYoung, Jeremy Baumgardt, Michael Cherry, David G Hewitt
10. **Assessing Road Mortality Patterns of Bobcats and Sympatric Wildlife to Inform Ocelot Conservation Strategies in South Texas**
Rupesh Maharjan, Sean Kiernan, Jack Towson, Elizabeth Grunwald, Thomas Yamashita, John H Young, Emma Brookover, Michael Tewes

11. **Are Seed Predators Filtering Mesophytic Tree Species Encroachment on Upland Sites in the Absence of Fire?**
Josh Pierce, Christopher Schalk, John Willis
12. **Analysis of Research Trends in the Texas Chapter of The Wildlife Society using Data Mining of Annual Meeting Programs**
Gabriel Andrade Ponce, Jessica Glasscock
13. **Evaluating Wild Pig Fecal Pollution in Coastal Recreational and Oyster-Harvesting Waters**
Lydia Cates
14. **Spatio-Temporal Patterns of American Woodcock Calling Behavior on a Multi-Use Landscape**
Cory Adams, James Childress, Jeremy McMurrin, Dave Plair, Daniel Saenz, Clifford Shackelford, Hope Zubek
15. **Threats to Restored Prairies Used by Overwintering Henslow's and LeConte's Sparrows on the Sam Houston National Forest**
Richard Reuben Schaefer, J. Howard Williamson, Josh Pierce, Dave Plair
16. **Mesocarnivore Activity on the Attwater Prairie Chicken National Wildlife Refuge**
Alexia Salazar, Joseph Veech
17. **Not A Wild Goose Chase - Effect of Western Cattle Egrets in San Antonio**
Uriel Eddy, Daniel Guerra, Joseph Plappert, Clay Green, Davida Smyth
18. **A Noninvasive Field EDNA Sampling Method for Detecting the Endangered Houston Toad**
Ciara Moroney, Christopher Schalk, Daniel Saenz, William Lutterschmidt, Matthew Greenwold
19. **Long-Distance Excursion by a Collared Peccary (*Pecari tajacu*)**
Daniel Benson, Edward Tomassetti, Abigail Dwelle, Emily Masterton, Marcus Blum, Jacob Dykes, Paul Lukacs, Whitney J Gann, Stephen Webb
20. **Comparison of Remote Monitoring Methods for Ducks in the Trans-Pecos**
Jack Bussey, Maureen Frank, Daniel Collins
21. **Impacts of Adaptive Grazing on Wildlife Communities in Arid Rangelands**
Bailey Knick, Stephen Webb, Ashley Long
22. **Comparing Spectral Indices to Analyze a Large-Scale Wildfire: the 2024 Panhandle Wildfire**

Riley Alvarez, Conner Ties, Morgan Treadwell, Valeria Enciso, Xavius Ortiz, Humberto Perotto

23. **Greater Roadrunner Range Expansion: Evaluation of Climatic and Landcover Changes**
Ty Cosper, Ashley Long, Heather Alexis Mathewson
24. **Impacts of Feral Hogs on Rangeland Ecosystems**
John Taylor, Stephen Webb, Jim Cathey
25. **Genetic Modeling of Assisted Migration Strategies for Endangered Ocelot Populations in South Texas**
Tam Ta, Randy DeYoung, Matthew Smith, Lisanne Petracca
26. **Assessing Habitat Suitability for Swift Fox in the Rita Blanca National Grassland**
Jonathan McClellan, Katja Bastiaens, John Tomecek, Carlos Portillo-Quintero, Dana Karelus, Clint Boal
27. **Effects of Guinea Grass on Northern Bobwhite Diet**
Alexandra Mueller, Jennifer Smith
28. **Assessment of Wetland Dynamics in the Chihuahuan Desert as Habitats for Migratory Birds**
Bryce Mann, Daniel Collins, Antonio Cantu, Maureen Frank, Patrick Donnelly
29. **How do Mule Deer Cope with Drought and Competition in the Trans-Pecos Region, Texas?**
Maggie Rector, Mark Bell, Levi James Heffelfinger, Shawn Gray, Justin French
30. **Effects of Bait Types on Camera Trap Detections of East Texas Animals**
Natalie Ransom, Sophia Grubbs, Andrew Moore, Clare Shaughnessy, Meredith Rash, Reuber Antoniazzi, Gabriel Andrade-Ponce
31. **Detection of Bats on a Restored Grassland on Fishers Island, NY**
Walker Barak, Tyler McMahon, Heather Alexis Mathewson, Adam Mitchell
32. **Use of Attractants to Increase Discoverability of Wildlife Passages by Mountain Lions**
Raymond Turner, Michael Cherry, Robert Alonso, Matthew Smith, Katherine McDaniel, Chloe Nouzille, David G Hewitt, Levi James Heffelfinger, Clayton Hilton, Dana Karelus, Grant Harris, Lisanne Petracca
33. **Modelling Suitability of Overwintering Habitat for Sandhill Cranes in the Southwest U.S. and Northern Mexico Highlands**
William Quarles, Antonio Cantu, Patrick Donnelly, Daniel Collins

34. **Assessment of Human Activity and Disturbance on Piping Plover Nesting Habitat**
Jose Alvarez, Tyler McMahon, Heather Alexis Mathewson, Adam Mitchell, Anna White
35. **Assessment of Capture-Related Stress in Mesocarnivores and Establishment of Baseline Cortisol Values for Future Stress Indicators in Captive Breeding Programs**
Meghan Murphy, Ashley Reeves, Landon Schofield, Lindsay Martinez, Alynn Martin, Tyler Campbell, Jason Sawyer, Haylee Pearce
36. **Activity Change in Mesopredators with Feral Hog Presence in Riparian Corridors in North-central Texas**
Gaven Sanders, Zachary Bellows, Cameron Starnes, Ricky Garibay, Heather Alexis Mathewson
37. **Developing Public Comprehensive Reference Networks for Insect Biodiversity from a Restored Maritime Grassland**
Jake Davis, Tyler McMahon, Heather Alexis Mathewson, Adam Mitchell
38. **From Calvin Klein to Carrion: Diel Responses and Conflicts Revealed by Camera Traps**
Andrew Moore, Reuber Antoniazzi, Clare Shaughnessy, Gabriel Andrade-Ponce, Sophia Grubbs, Natalie Ransom, Meredith Rash
39. **A Comparison of Home Range Size for the Swift Fox in Northwest Texas**
Katja Bastiaens, Jonathan McClellan, John Tomecek, Kerry Griffis-Kyle, Dana Karelus, Clint Boal
40. **An Assessment of Carnivore Interspecific Competition and Density in an Endangered Felid Reintroduction Landscape**
Kyle Yorke, Tavis Forrester, Landon Robert Schofield, Lisanne Petracca
41. **Wood Duck Habitat Selection and Range Expansion in North-central Texas**
Paige Elliott, Chloe Delahoussaye, Cameron Starnes, Heather Alexis Mathewson
42. **Effects of Installing Symbolic Fencing Around Piping Plover Nesting Sites on Fishers Island, NY**
Emma Clarke, Tyler McMahon, Anna White, Heather Alexis Mathewson, Adam Mitchell
43. **Modeling the Effectiveness of the Electrification of Spin Cast Feeders as a Deterrent for American Black Bears**
Jake Gowdy, Louis Harveson, Matt Hewitt, Amanda M. Veals Dutt

44. **Migratory Routes and Migration Characteristics of Zone-tailed Hawks that Nest in West Texas**
Will Britton, Clint Boal, Brent Bibles, Sarah Montalvo, Tania Zarrin Homayoun
45. **Seasonal Variation of Nutritive Value and Mineralogy of Five Native Grass Species in the Texas High Plains and Rolling Plains**
Jesse Haudrich, Shaelyn Rainey, Alice Mathew, Aaron Norris, Caitlyn Cooper-Norris
46. **Predator-prey Interaction in Riparian Habitats in North-central Texas**
Abigail Durham, Ricky Garibay, Cameron Starnes, Zachary Bellows, Heather Alexis Mathewson
47. **Investigating the Effectiveness of Droplet Digital PCR (DDPCR) for Detecting Species of Greatest Conservation Need (SGCN) in Texas**
Matthew Blow, Jace Douglas, James York, Marsha Williams, Lance Williams, Archis Grubh, Matthew Greenwold
48. **Species-specific Responses to Olfactory, Visual, and Auditory Attractants in a South Texas Carnivore Community**
Levis Vasquez, Lisanne Petracca
49. **The Use of Livestock Guardian Dogs for Swift Fox Conservation**
Haley Sloan, John Tomecek, Clint Boal, Dana Karelus
50. **How do Different Community Assemblages Shape Prey Partitioning Among South Texas Mesocarnivores**
Truman Collins, Lisanne Petracca, David G Hewitt, Andrea Bruno Montalvo, Matthew Smith
51. **Does Supplemental Feeding Affect Population Estimates of White-tailed Deer?**
Brianna Imel, Aaron Foley, Randy DeYoung
52. **Summer Inventory of Landbirds in Kenai Fjords National Park**
Mack Hughes, Sadie Ulman, Ashley Long, Heather Alexis Mathewson
53. **Development of Novel Environmental DNA Methods to Detect Bumble Bee Presence on Floral Resources**
Ryan Ament, Hannah Atkinson, Addison Laine Singleton, Ty Cosper, Heather Alexis Mathewson, Jeff Brady, Adam Mitchell
54. **Assessing Medium- to Large-Sized Mammal Communities Across a Texas Urban-Rural Gradient**
Else Praasterink, Ty Werdel, Roel Lopez, William Rogers, Marcus Blum
55. **Effects of the US-Mexico Border Wall on Landcover in the Lower Rio Grande Valley, Texas**

Reece Allen, Ty Werdel, Daniel Scognamillo, Humberto Perotto-Baldivieso

56. **Grazing Across Time: Evaluating Long-Term Vegetation Changes in Desert Grasslands Under Continuous and Rotational Livestock Systems**
Sarah Jane Gilbert, Carlos Gonzalez, Silverio Avila, Clifton Albrecht
57. **White-tailed Deer Activity in Suburban and Rural Riparian Habitats**
Sage Barmettler, Ricky Garibay, Cameron Starnes, Heather Alexis Mathewson
58. **Year-round Seasonal Variation Effects on Scaled Quail Movement Behavior in the Trans-Pecos**
Hayley Elizabeth Shultz
59. **The Influence of Breeding Effort by Female Northern Pintails on Performance During Autumn Migration and Winter**
Jessica Johnston, Joseph Michael McGovern, Jordan Giese, Aditya Singh, Kevin Kraai, Bart Ballard
60. **Rio Grande Wild Turkey Summer Roosting Habitat Selection on Kerr Wildlife Management Area**
Ian Mack II, Justin Foster, Joshua Vasquez, Warren Charles Conway, Heather Alexis Mathewson
61. **Enhancing Students' Understanding of Ecology, Conservation Identity, and Conservation Awareness with Outdoor Education Programming**
Cheyenne Taylor Mack, Heather Alexis Mathewson
62. **Low-Effort, High-Resolution: Remote Cameras as an Emerging Tool for Monitoring Small Mammal Communities**
Hayden Huff, Andrea Bruno Montalvo, Ty Werdel
63. **Using Drones to Assess Spatial Arrangement of Vegetation in Rotational and Continuous Grazing Regimes**
Christian Lewis, Carlos Gonzalez, Silverio Avila, Antonio Cantu
65. **Avian Diversity of a Texas Solar Site During Spring Migration**
Emily Stelling, Maria Ramirez, Madison Nadler, Leroy Walston, Timothy Bonner, Clay Green, Sarah Fritts
66. **Spatial Responses of Herpetofauna to Burn Piles Under Cattle and Multispecies Grazing Regimes**
Austin Ryan Kelly
67. **Resource Selection of Non-breeding Cackling Geese (*Branta hutchinsii*) in the Southern Great Plains**
Javier Segovia, Alynn Martin, Kevin Kraai, Bart Ballard

68. **Parasitism In Quail: Drivers of Spatial Patterns in Texas**
Maedean Cardenas, Alejandro Bazaldua, Fidel Hernandez, Alynn Martin
69. **Can Unmanned Aerial Vehicles Be Used to Estimate Stocking Rate in South Texas?**
Abdiel De Hoyos, Fidel Hernandez, Brianna Imel, Andrea Montalvo, Aditya Singh
70. **Shifts in Historical and Contemporary Fish Assemblages and Environmental Variables in South Texas Streams**
Logan Liesman, Zachary Mitchell

Abstracts: Clarence Cottam Awards Competition

Exhibit Hall B, Feb 19, 2026

Moderator: Silverio Avila

9:30 AM: Understanding Drivers of Population Performance of White-Tailed Deer in South Texas

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

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

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

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

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

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

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

Landon Schofield, East Foundation

Tyler Campbell, East Foundation

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

Abstract: Understanding drivers of population performance is critical for effective wildlife management. For ungulates, variation in adult female survival can have the highest proportional impact on population growth rate, yet adult survival is typically high and stable. Conversely, juvenile survival is an important determinant of population growth because it is highly variable and influenced by environmental stochasticity, landscape characteristics, and land management. We assessed population performance of white-tailed deer (*Odocoileus virginianus*) not exposed to predator control, supplemental feed, or harvest on working rangelands in South Texas, USA. Our study identified causes of mortality, estimated survival, and evaluated the influence of external factors driving deer recruitment. During 2020-2024, we collared deer at birth, 4-months-old, 8-months-old, and as adults to monitor age-specific survival and assessed the ultimate and proximate causes of mortality. We identified the reproductive status of adult female deer (≥ 2.5 years) captured during autumn from 2011-2023 to understand influences on lactation rates. We found coyotes (*Canis latrans*) accounted for most mortalities of deer. The probability of survival for juveniles through the first full year of life ranged from 14-32% while adult female survival was high and stable at 85% (95% CI = 0.79-0.92). We also found neonates born in sandier areas had increased mortality risk. Finally, we found lactation rates were positively influenced by increased brush cover and precipitation, and negatively influenced by cattle presence. Our results provide baseline information on population dynamics of South Texas rangeland deer

and highlight the importance of brush cover and precipitation on deer population performance.

9:50 AM Survey Methodology and Population Estimate for the Texas Kangaroo Rat

Derek Malone, Texas Tech University

Clint Boal, US Geological Survey

Dana Karelus, Texas Parks & Wildlife Department

Carlos Villalobos, Texas Tech University

Richard Stevens, Texas Tech University

Brent Bibbes, Unity College

Abstract: Developing a reliable and repeatable survey methodology for a rare nocturnal small mammal like the Texas kangaroo rat (*Dipodomys elator*) has proven challenging. Standard survey methodologies for this species typically involve driving spotlight transects, Sherman trapping, or a combination of the two. These survey methodologies are good for confirming presence but fail to provide information on detection probability. We adapted point count methodology commonly employed to survey for birds but with the addition of a thermal monocular with a laser rangefinder. This allows us to identify kangaroo rats and record distance to detection. We surveyed 746 points spaced 250 meters apart 1-3 times for a total of 2,093 surveys during the months of May-July in North Texas. This culminated in 76 detections of Texas kangaroo rats at 33 locations. We used the package Distance in R to model detection probability and generate a density estimate. Then, we adjusted the modeled survey effort based on the percent cover of habitat within each point count to account for portions of surveyed area that are not habitat and extrapolated density estimates across the species' range to provide a population estimate. The top model from our candidate set had an average detection probability of 0.18 and a density estimate of 0.042/ha. The habitat adjusted model produced a density estimate up to 0.82/ha and a population size estimate of 1,571 individuals. The development of a reliable survey methodology such as this one is crucial to inform management for such a rare species.

10:10 AM **Genomic Insights into Endangered Ocelot Populations to Inform Species Recovery**

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

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

Matthew Smith, NA

Ashley Reeves, East Foundation

Alynn Martin, Caesar Kleberg Wildlife Research Institute

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

Abstract: Management of endangered species involves maintaining genetic diversity and connectivity among populations. The effects of inbreeding and low genetic diversity leading to lower survival and poor conservation outcomes. Ocelots are a federally listed felid species in the United States, with 40 years, leading to the inbreeding and genetic differentiation. We used whole genome sequencing data from 85 ocelots (44 wild, 41 zoo-based) to identify single nucleotide polymorphisms (SNPs) to quantify inbreeding, assess population structure, and compare source stocks for ex situ propagation for reintroduction. We found that zoo-based ocelots had nearly double the genetic diversity compared to wild ocelots. Inbreeding was high in the wild populations, while zoo-based ocelots only had signals of historic inbreeding. Further, we identified five dispersing individuals between the wild populations, challenging our previous assumptions that the two populations were in complete isolation of each other. Last, we identified two first-generation offspring resulting from outcrosses between the populations. These first-generation offspring had the highest genetic diversity of all wild ocelots and signify a restoration of genetic diversity through gene flow. Additionally, we found that zoo-based ocelots are a viable option for genetic rescue in reintroduced individuals. Our work represents a unique snapshot into the effects of restored gene flow in an inbred and isolated population, and together, these findings present a new outlook for the genetic management and conservation of ocelots in South Texas.

10:30 AM **Use of Dirt Livestock Tanks by Migrating and Wintering Birds in Chihuahuan Desert Grassland and a Comparison of Survey Methods**

Emily Blumentritt, Borderlands Research Institute - Sul Ross State University

Justin French, Borderlands Research Institute - Sul Ross State University

Daniel Collins, Borderlands Research Institute - Sul Ross State University

Maureen Frank, Borderlands Research Institute - Sul Ross State University

Abstract: The arid grasslands of the Chihuahuan Desert provide essential wintering grounds for many of North America's grassland birds, and dirt livestock tanks are a common feature of this landscape. Although point counts are traditionally used to measure bird diversity at a specific resource, passive acoustic monitoring (PAM) is an alternative method that could continually monitor bird activity. The goals of this study were to (1) determine which bird species are using dirt livestock tanks in Chihuahuan Desert grasslands during winter and migration; (2) determine how birds are using dirt tanks as a resource; (3) evaluate if acoustic monitoring is equivalent to in-person point count surveys for detecting species richness. We conducted double-observer point count surveys and used PAM at dirt tanks from September to March, 2023-2025. Sixty-nine bird species were detected during point count surveys, and 59 (86%) were observed to be using a tank. Gini-Simpson Diversity Index values for each tank ranged from 0.39 to 0.89. Foraging was observed more frequently than drinking, so tanks may be valuable to birds not only as a source of water but as a source of food. We detected 127 bird species via PAM, an increase in species richness of 54% compared to point-count surveys. When PAM detections were restricted to the same sample size as in-person point count surveys, species richness detected via PAM was reduced to 45 species, indicating that the main advantage of PAM compared to point count surveys is easy sample size scalability.

10:50 AM **Spring Migration Strategies Are Linked to Behavioral Thermoregulation in Northern Pintails**

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

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

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

Kevin Kraai, Texas Parks & Wildlife Department

Daniel Collins, Borderlands Research Institute - Sul Ross State University

Paul Link, Id

Cory Overton, USGS

Michael Casazza, U.S. Geological Survey

Dale James, Rob and Bessie Welder Wildlife Foundation

Mason Cline, New Mexico Department of Game and Fish

Clayton Hilton, Texas A&M University-Kingsville

Bart Ballard, Texas A&M University - Kingsville

Abstract: During spring migration, balancing time, energy, and predation risks is critical for arriving at breeding areas in a timely manner. Adverse thermal conditions challenge this balance. Individual variation in behavioral thermoregulation is an important, but often-overlooked component of optimal migration. We identified spring migration strategies of northern pintail (*Anas acuta*, hereafter “pintail”). Among migration strategies, we compared thermal conditions that pintails experienced and assessed pintails’ behavioral responses to thermal conditions. We used GPS and accelerometer data from female pintails captured during late winter (January – March) from 2019 – 2023 to define spring migration strategies and calculate overall dynamic body acceleration (ODBA), a proxy for activity-related energy expenditure. We used a microclimate model to downscale hourly air temperatures during stopovers. We modeled thermal exposure through time, and ODBA in response to hourly temperature and daily temperature extremes by migration strategy using generalized additive models. Pintails demonstrated strategies that either minimized time (fast strategy, $n = 155$) or energy (slow strategy, $n = 76$), but strategies experienced similar average thermal conditions throughout migration. However, in response to cold temperatures, fast-strategy pintails increased ODBA, while slow-strategy pintails decreased ODBA. Both strategies decreased ODBA as temperature increased, but this was more pronounced in fast-strategy pintails. Fast-strategy pintails likely carried heavier fat loads to power longer-distance flights, making them better-acclimated to cold conditions. Slow-strategy birds appeared to conserve energy in cold conditions, but remained more active in warm conditions. We demonstrate intraspecific variation in energetic and thermal cover requirements; demographic consequences of this variation warrant future investigation.

11:10 AM **Using Animal Movement Models and Contact Networks to Understand Potential Spillover Routes Between Two Sympatric Felid Species**

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

Alynn Martin, Caesar Kleberg Wildlife Research Institute

Mason Fidino, Lincoln Park Zoo Department of Conservation and Science

Clayton Hilton, Texas A&M University-Kingsville

Ashley Reeves, East Foundation

Matthew Smith, NA

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

Abstract: Disease can have negative impacts on wildlife populations. Understanding the drivers associated with disease spread is important for mitigating spillovers, particularly when managing an endangered species. Direct contact is one such mechanism for disease spillover between different species, which is influenced by many factors such as species-level life histories, resource selection, landscape configuration, and population density. In South Texas, we used integrated step selection analysis (iSSA) and network ecology to better understand habitat selection and drivers of interspecific and intraspecific interactions between the endangered ocelot (*Leopardus pardalis*) and bobcat (*Lynx rufus*). We found that both ocelots and bobcats share selection for areas with high vegetation density and vegetative structure, with ocelots selecting more strongly for both. Additionally, we captured 503 contacts, both intra and interspecific, between collared cats. Bobcats were important drivers of contacts among individuals in the network, with bobcats having the highest-ranked individual and species-level centrality betweenness metrics. Importantly, we found that contacts are occurring in areas of greater proportional cover over 0.5m and lower vegetation density. To promote ocelot conservation and potential disease mitigation, managers should seek to promote areas of high understory density, as this could allow for ocelots to spatially partition from bobcats more effectively. Our research provides a greater understanding of potential disease dynamics among sympatric felid species in this system and can ultimately inform management decisions and reintroduction efforts for ocelots.

Abstracts: General Sessions

Conservation & Ecology of Mammals I

Salon F & G, February 19, 2026

Moderator: Rachel Richter

1:30 PM **Spatial Ecology of the Carmen Mountain White-Tailed Deer in the Serranías Del Burro Mountains, Coahuila, Mexico**

Ivan Lozano, Texas A&M University - College Station

E. Alejandro Lozano-Cavazos, Universidad Autónoma Agraria Antonio Narro

Stephen Webb, Texas A&M Natural Resources Institute

Abstract: The Carmen Mountain white-tailed deer (*Odocoileus virginianus carminis*) is a mountain-adapted subspecies restricted to higher elevation habitats of northern Coahuila and the Trans-Pecos region in Texas. Carmen Mountain white-tailed deer occupy rugged pine–oak–juniper woodlands with steep slopes, and areas where dense cover and reliable water sources are present. Despite their ecological and conservation importance, little quantitative information exists on fine-scale movement, space use, and habitat. To address this gap, we captured and fitted 16 deer (13 males, 3 females) with GPS collars (1 fix every 2 hours), and monitored them for 1 year across 2 study sites in the Serranías del Burro, Coahuila, Mexico. We estimated seasonal and annual home ranges using 95% fixed kernel density estimators. Annual home range estimates averaged 841.4 ha (\pm 598.2 SD) for males and 174.0 ha (\pm 88.3 SD) for females. Seasonal ranges of males varied from 605.0 ha during summer to 802.0 ha during spring (winter: 454.2 ha; autumn:607.4). Female deer showed similar patterns of seasonal space use with smaller ranges during summer (89.2 ha) and the largest ranges during spring (183.0 ha). We also documented high seasonal range site fidelity for most deer with the exception of 2 younger (1.5–2.5 years) males that exhibited use of disjunct ranges. These results represent the first quantitative assessment of space use for Carmen Mountain white-tailed deer in Mexico, and provide a foundation for future habitat selection modeling and binational conservation planning aimed at protecting mountain habitats for this species.

1:45 PM **Movement Ecology and Interspecific Interactions of a Novel Elk Population in Texas**

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

Ashlyn Halseth-Ellis, Caesar Kleberg Wildlife Research Institute - Texas A&M University - Kingsville

Michael Cherry, Caesar Kleberg Wildlife Research Institute

Warren Conway, Texas Tech University

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

Justin French, Borderlands Research Institute - Sul Ross State University

Shawn Gray, Texas Parks & Wildlife Department

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

Abstract: Pre-European settlement, elk (*Cervus canadensis*) populations were found across North America, including throughout prairie regions. Anthropogenic pressures and landscape changes during European settlement caused range contractions to primarily mountainous, forested regions. Recently, elk populations expanded back into prairie regions such as the Texas Panhandle, where only basic population information exists. Our objectives were to assess elk space use, resource selection, and interactions with sympatric cervids. We GPS-collared and monitored 24 elk, 38 mule deer (*Odocoileus hemionus*), and 42 white-tailed deer (*O. virginianus*) in the Texas Panhandle from February to November 2025. Dynamic Brownian bridge movement models revealed that female elk used 43.3 km² (SD=15.2) while males used 96.8 km² (SD=43.6). Elk selected areas with lower relative elevation and steeper slopes, areas closer to cropland and woodland, and avoided grassland. We estimated interspecific niche overlap using Bhattacharyya distance (BD), a joint measure combining the effects of niche position and breadth. Niche overlap was greater between elk and mule deer (BD=3.96) than between elk and white-tailed deer (BD=4.51), but mule deer and white-tailed deer niches overlapped most (BD=1.39), indicating elk are more dissimilar in resource use. Space use estimates of Texas elk were greater than 5 times the commonly reported values of elk populations in forested regions. This may be an indicator of marginal quality habitat or a function of populations transitioning back to prairie regions with little risk of interspecific competition. Understanding the unique ecology of elk populations in prairie ecosystems is critical for managers to develop proper management practices.

2:00 PM **Movement and Social Responses of Aoudad and Mule Deer to Population Management Efforts**

Andrew Dotray, Borderlands Research Institute - Sul Ross State University

Justin French, Borderlands Research Institute - Sul Ross State University

Carlos Gonzalez, Borderlands Research Institute - Sul Ross State University

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

Shawn Gray, Texas Parks & Wildlife Department

Abstract: The interactions between non-native aoudad (*Ammotragus lervia*) and mule deer (*Odocoileus hemionus*) are poorly understood. However, they likely compete at greater population densities and mule deer may shift space use to mitigate resource competition. We sought to understand how aoudad population reduction via aerial gunning affects the space use of both species. We predicted that aoudad would shift their ranges to minimize visibility following population reduction. In April 2023, we captured and collared 40 aoudad and 40 mule deer in the Chinati and Quitman mountain ranges in the Trans-Pecos. To assess aoudad and mule deer response to aoudad reduction, we lethally removed aoudad ($n = 7,268$) in the Chinati Mountains in August 2024 and June 2025. We estimated the monthly space use of both species using Brownian bridge estimators. We used generalized additive models with a Gamma distribution and log-link to examine the effects of aerial gunning on aoudad range sizes. The top model included a slow decay rate in the effect of aerial gunning on monthly range size ($\Delta AIC = -4.67$, $R^2 = 6.87$). Proportionally, aoudad range sizes shrank by 28% ($\exp(b) = 0.72$, 0.59-0.96, 95% CI) following aerial gunning, but returned to pre-gunning sizes within 252 days. However, wide prediction intervals suggest high variation among individual range sizes and the return rate to pre-gunning averages. Neither aoudad nor mule deer dispersed from the treated area in response to aerial gunning. These results suggest that aoudad reduce movement in response to treatment, and aerial gunning did not displace either species.

2:15 PM **Maternal Selection of Fawn-Rearing Habitat in an Agricultural Matrix and Implications for Pronghorn Neonate Survival**

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

Matthew Turnley, Oklahoma State University

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

Derek Hahn, Oklahoma State University

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

W. Sue Fairbanks, Oklahoma State University

Colter Chitwood, Oklahoma State University

Robert Lonsinger, Oklahoma State University

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

Randy DeYoung, Texas A&M-Kingsville CKWRI

George Wang, East Central University

Michael Cherry, Caesar Kleberg Wildlife Research Institution

Abstract: Life history theory predicts that population dynamics of long-lived species are most sensitive to changes in adult survival, but because adult survival is relatively stable, population dynamics are often more influenced by recruitment. In pronghorn (*Antilocapra americana*), neonate survival is highly variable and can be influenced by variation in resource availability, vegetation structure, and predation pressure. Lactation is the most energetically costly period for parturient females; therefore, females should select fawn-rearing areas with landscape characteristics that help optimize trade-offs between neonate protection from predators and forage availability. Specifically, areas with higher vegetation height may provide concealment cover from predators, while high-quality forage may provide the resources required to meet the energetic demands of lactation. Consequently, maternal selection of fawn-rearing areas may have important implications for neonate survival. To examine how landscape characteristics influence maternal selection of fawn-rearing areas, we captured and fitted 190 adult female pronghorn with GPS collars from 2022 to 2025 in western Oklahoma, USA. We monitored parturient females and captured 172 neonates, which we fitted with radio-linked collars to monitor survival. We used resource selection functions to evaluate selection for vegetation height, normalized difference vegetation index, distance to roads, and land cover type within individual home ranges during the fawn-rearing period (14 days post-birth). This research provides insight into maternal selection decisions, factors that may limit neonate survival, and whether maternal selection patterns remain adaptive in human-modified landscapes.

2:30 PM Environmental and Anthropogenic Drivers of Pronghorn Home-Range Size in the Southern Shortgrass Prairie

Grace Sagebiel, Texas A&M University Kingsville Student Chapter of The Wildlife Society

Brianna Imel, Texas A&M University - Kingsville

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

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

Michael Cherry, Caesar Kleberg Wildlife Research Institution

Matthew Turnley, Oklahoma State University

Derek Hahn, Oklahoma State University

W. Sue Fairbanks, Oklahoma State University

Colter Chitwood, Oklahoma State University

Robert Lonsinger, Oklahoma State University

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

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

George Wang, East Central University

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

Abstract: A home range encompasses the area an animal uses to meet life history requirements. Thus, home range size reflects resource distribution and environmental conditions, serving as an indicator of habitat quality. Pronghorn (*Antilocapra americana*) evolved in open grasslands of North America, which are increasingly fragmented and lost to human development. Understanding the factors that influence home-range size provides critical insight into landscape features that affect habitat quality and potentially limit the ability of individuals to meet resource requirements. We estimated home ranges using autocorrelated kernel density estimation (AKDE) for pronghorn (162 females, 65 males) across growing and dormant seasons in western Oklahoma from 2022 to 2025, then used generalized linear mixed models to examine spatiotemporal drivers of home-range size. Our results indicated home-range size was positively associated with the proportion of cropland within the home range and negatively associated with road density. Furthermore, home-range size was negatively associated with standardized precipitation-evapotranspiration index (SPEI), which measured moisture availability, indicating pronghorn had smaller home ranges during wetter conditions. Larger home ranges in areas of greater cropland may reflect limited forage availability, where a single crop species replaces a diversity of native forage. Greater road densities may restrict pronghorn movement by creating barriers and fragmenting habitat, resulting in smaller home ranges. Smaller home ranges during wet seasons may indicate that wet seasons positively affect the quality and quantity of forage material for pronghorn. Our results highlight that pronghorn conservation and management may need to account for increasingly anthropogenic landscapes and expected climate shifts.

2:45 PM Influence of Wildfires, Forest Restoration, and Predation Risk on Elk Habitat Selection in North-Central New Mexico

Sharon Valverde, Texas Tech University

James Cain, III, Department of Rangeland, Wildlife and Fisheries Management

Warren Conway, Texas Tech University

Abstract: Due to historical land use and fire suppression, forests in northern New Mexico are at abnormally high risk for catastrophic wildfires. In response, a coalition of agencies under a USDA Collaborative Forest Landscape Restoration Project began restoring ~85,000 ha in the Jemez Mountains via forest thinning and prescribed fire. As part of these restoration efforts, we measured responses of collared Rocky Mountain elk (*Cervus canadensis*) to changes in stand characteristics, forage quality and quantity, and predation risk following both wildfire and restoration treatments. From 2013-2018, we monitored movements of 95 female elk and their most common natural predators, black bears (*Ursus americanus*, 58) and cougars (*Puma concolor*, 14), while also collecting biomass and forage quality data from 200 vegetation plots seasonally stratified within 6 dominant stand types and across treatment types and ages. These factors, along with landscape and climatic features, were included in seasonally-specific Resource Selection Functions. Our top models suggest that elk in the Jemez Mountains are selecting (3rd order) for up to 10-year-old sites burned by wildfire, the oldest prescribed burned sites (10+ years), and the youngest (< 4 years) and oldest (10+ years) sites that were both burned and thinned, while reducing their selection of untreated and thinned only sites. At 2nd order selection, elk only selected for up to 10-year-old wildfire burns. However, selection varied seasonally. This research is noteworthy for simultaneously evaluating the impact of restoration efforts, wildfires, and predation risk on one of the most ecologically and economically important species in the region.

Conservation & Ecology of Birds I

Vine 1 & 2, February 19, 2026

Moderator: Alex Hoxie

1:30 PM **Differential Effects of Temperature and Drought on the Survival of Sympatric Quail Species in a Semiarid Environment**

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

Evan Philip Tanner, Caesar Kleberg Wildlife Research Institute - Texas A&M University - Kingsville

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

Caleb McKinney, Texas A&M University - Kingsville

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

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

Fidel Hernandez, Texas A&M University - Kingsville

Leonard Brennan

David G Hewitt, Caesar Kleberg Wildlife Research Institute - Texas A&M University - Kingsville

Ryan Luna, Borderlands Research Institute - Sul Ross State University

John McLaughlin, Texas Parks and Wildlife Department

Humberto Perotto, Texas A&M University

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

Abstract: Scaled quail (*Callipepla squamata*) and northern bobwhite (*Colinus virginianus*; hereafter “bobwhite”) are two quail species that occur sympatrically at the eastern and western periphery of their respective distributions. Both species are experiencing declines, yet drivers of demographic rates are better documented for bobwhite compared to scaled quail. Moreover, studies quantifying survival of sympatric populations are limited, though these provide opportunities for traditional demographic studies, given that environmental factors may have disparate effects on interacting species. We evaluated the influence of temperature and drought on the monthly survival of both species within a hierarchical version of Pollock’s Robust design using capture-mark-recapture data collected at two sites of sympatry in Dimmit and Duval counties, Texas, USA from 2022-2024. We found that increasing average daily high temperatures negatively influenced survival more strongly for bobwhite than scaled quail.

Furthermore, we found that increasing drought severity negatively influenced survival only in Dimmit County. The greater sensitivity of bobwhite to high temperatures and the site-specific influence of drought in Dimmit County reflects how species-specific physiological tolerances and local environmental filters interact to shape demographic outcomes. These context-dependent population responses demonstrate that variation in thermal and hydric stress across landscapes can differentially constrain survival for co-occurring species, even when exposed to the same broad climatic regimes.

1:45 PM Northern Bobwhite Survival Post Hunting-Party Interactions

Amanda Montemayor, Caesar Kleberg Wildlife Research Institute - Texas A&M University – Kingsville

D. Abe Woodard, East Foundation, Hebbronville, TX

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

Abstract: A critical element in the management of game species is accounting for total harvest mortality. This includes both direct (i.e., retrieved) and delayed mortality (i.e., crippling loss) resulting from encounters with hunting parties. However, the mortality rate of individuals exposed to a hunting encounter but not retrieved or visibly impacted remains largely unknown. Our research aims to evaluate the effects of hunter–covey interactions on the survival of northern bobwhite (*Colinus virginianus*) and refine estimates of delayed mortality, including those that may go undetected by hunters. During the 2022–2024 quail hunting seasons, we captured 25 coveys (195 individuals) across two East Foundation ranches in Jim Hogg and Kenedy Counties, Texas. Each individual was fitted with a VHF radio transmitter collar, and coveys were released together at the capture site. We exposed fifteen coveys to a hunting encounter within 16 hours of release, mimicking traditional South Texas quail hunting with shotguns and dogs. The remaining 10 coveys served as our control group and were not hunted post-release. We monitored all individuals daily for 14 days post encounter and then weekly through the end of the hunting season. Preliminary analyses suggest lower survival in hunted coveys (0.69 ± 0.14 SE) compared to non-hunted coveys (0.82 ± 0.10 SE), indicating that mortality beyond direct harvest occurs among covey members exposed to hunting. This study will improve understanding of mortality associated with hunting encounters beyond direct harvest. Accurately accounting for these sources of mortality and quantifying harvest pressure are critical for improving management decisions for northern bobwhite populations.

2:00 PM **Assessing the Effectiveness of Camera-trap Distance Sampling for Quail Abundance and Density at RPQRR**

Sean Blatstein, Rolling Plains Quail Research Foundation (Primary Presenter)

Dan Foley, Rolling Plains Quail Research Foundation

Abstract: The accurate estimation of wildlife abundance and density is essential for effective population monitoring and management. Camera-trap distance sampling (CTDS) offers a way of estimating wildlife populations that is significantly cheaper and less labor intensive than traditional methods, such as call counts or helicopter surveys. This study aims to evaluate the effectiveness of CTDS as a methodology for estimating Northern Bobwhite (*Colinus virginianus*) and Scaled Quail (*Callipepla squamata*) abundance and density at the Rolling Plains Quail Research Ranch (RPQRR). Twenty-two camera traps were deployed across a 413 acre pasture following a random sampling design, and detections were recorded over a 9-week period from September to November 2025. Detection distances were obtained by measuring horizontal radial distances from each camera and taking reference photos with flagging placed at 1m intervals out to 6m. Estimates were generated using Distance 8.0 software. CTDS-derived estimates were compared with mark-recapture and helicopter transect survey results to assess accuracy and reliability. The results indicate a slight overestimation of abundance, with CTDS producing an estimate of 295 quail compared to the mark-recapture estimate of 238. However, the CTDS-derived density of 0.713 birds per acre closely aligned with the helicopter-derived density of 0.747 birds per acre. These results suggest that CTDS may be a reliable tool for quail population assessment in this environment, highlighting the potential of camera-based distance sampling approaches to support more efficient and less invasive monitoring of quail populations in the Texas Rolling Plains.

2:15 PM **Effects of Invasive Guinea Grass on the Space Use of Northern Bobwhites in South Texas, USA**

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

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

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

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

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

Abstract: Guinea grass (*Megathyrus maximus*), an invasive bunchgrass originally from subtropical Africa, is found across rangelands on the Gulf Coast of South Texas. Here, guinea grass reduces the species and structural diversity of rangeland plant communities. It also grows in dense monocultural stands that potentially act as movement barriers for wildlife including northern bobwhite (*Colinus virginianus*). However, although guinea grass is prevalent in South Texas, little is known about its effects on this economically important gamebird. Here, we aim to explore how guinea grass density affects second and third order habitat selection as well as home range sizes of northern bobwhite across seasons and behavioral states using a combination of VHF and GPS telemetry. We posit that increasing guinea grass densities will restrict bobwhite movements and reduce the amount of usable space in the environment. As such, we predict that greater guinea grass densities will result in increased bobwhite home range sizes and avoidance of guinea grass above a certain density across all orders of habitat selection. We will assess guinea grass density at used and available locations using a combination of remote sensing imagery and on-the-ground vegetation measurements that describe species and structural composition of plant communities to assess habitat selection. Remote sensing imagery will also be used to examine the impact of guinea grass density on bobwhite home range size. Results from this study will allow South Texas wildlife managers to create informed management plans that foster optimal northern bobwhite habitat on rangelands invaded by guinea grass.

2:30 PM Northern Bobwhite Space Use Immediately Following Prescribed Fire

Carolina Munoz, CKWRI

Fidel Hernandez, Texas A&M University - Kingsville

D. Abe Woodard, East Foundation

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

Kristyn Stewart-Murphy, Caesar Kleberg Wildlife Research Institute - Texas A&M University - Kingsville

Abstract: Prescribed burning is a cost-effective and ecologically beneficial management tool commonly used to improve habitat for northern bobwhite (*Colinus virginianus*). While fire is known to enhance forb production and bunchgrass structure, less is understood regarding how bobwhites respond behaviorally and spatially to burn events. We initiated a study in southern Texas (Kenedy County) to quantify post-burn landscape characteristics and bobwhite space use following prescribed burn. We captured bobwhites in March 2025 and fit 20 bobwhites with solar-powered GPS backpack transmitters. A 198 hectares prescribed burn was conducted in March 2025, and we monitored bobwhites before, during, and post burn. We reclassified a high-resolution satellite image (3m×3m) of the study site taken on the day following the burn into burned and non-burned areas using machine learning methods to permit quantification of the burned landscape (e.g., percent area burned, patch size, edge density, etc.). We then modelled bobwhite space-use in response to burned areas using integrated step selection functions (ISSF's) during the 1-month post burn period. Preliminary results from our reclassification indicate 58% of the study site was burned. Bobwhites did not select for or against burned or non-burned patches 1-month post burn ($\beta = 0.15 \pm 0.28$; $p > 0.6$). We will repeat this study during spring 2026. This project represents the first use of solar-powered GPS technology to document fine-scale bobwhite responses to prescribed fire. Our results aim to help land managers better understand how bobwhites interact with recently burned landscapes and improve management practices on South Texas rangelands.

2:45 PM Colonization and Extinction Dynamics of Chestnut-Bellied Scaled Quail and Associated Species in Tamaulipan Thornscrub

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

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

Caleb McKinney, Texas A&M University - Kingsville

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

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

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

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

Fidel Hernandez, Texas A&M University - Kingsville

Caleb Roberts, U.S. Geological Survey, Arkansas Cooperative Fish & wildlife research unit

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

Leonard Brennan, NA

John McLaughlin, Texas Parks and Wildlife Department

Humberto Perotto-Baldivieso, Texas A&M University - College Station

Abstract: Colonization and extinction dynamics provide insight into how landscape change affects species persistence, and can inform monitoring efforts assessing population decline, expansion, or isolation over time. South Texas has experienced significant landscape change, with nearly 90% of Tamaulipan thornscrub lost or degraded, often replaced by simplified shrub communities dominated by few woody species with an understory of non-native grasses. Shrubland obligates within thornscrub, such as the chestnut-bellied scaled quail (*Callipepla squamata castanogastris*; hereafter “scaled quail”), are sensitive to these plant community changes. Estimating colonization and extinction dynamics of scaled quail and other shrubland obligates provides a measure of how these populations respond to thornscrub alteration. We used a co-occurrence analysis, which identified species consistently associated with the scaled quail, to identify additional shrubland obligates in thornscrub. Using ranch-level point-count surveys (n = 2,040; 2022–2023), we identified 16 species associated with scaled quail, including 11 positive and 5 negative associations. Positive associations with species such as pyrrhuloxia (*Cardinalis sinuatus*) reflect shared associations for intact thornscrub structure, while negative associations with species such as northern bobwhite (*Colinus virginianus*) reflect divergent habitat requirements. To evaluate colonization and extinction rates, we will analyze North American Breeding Bird Survey data (1967–2023) across 19 counties in South Texas, treating each route as an independent site and estimating colonization and extinction probabilities using occupancy models. These results can guide targeted management and restoration strategies supporting the conservation of scaled quail and

other shrubland-dependent species in South Texas, improving understanding of population dynamics in altered landscapes.

New Technology & Applications

Salon B, February 19, 2026

Moderator: Antonio Cantu

1:30 PM Thermal Drones as a Tool for Crocodylian Nest Detection: A Field Assessment in American Alligators (*Alligators Mississippiensis*)

Brandon Gross, Stephen F. Austin State University

Jonathan Warner, Texas Parks & Wildlife Department

Victoria Williams, Stephen F. Austin State University

Ethan Menzel, Stephen F. Austin State University Student Chapter of The Wildlife Society

I-Kuai Hung, Stephen F. Austin State University

Cord Eversole, Stephen F. Austin State University

Abstract: Crocodylian nest counts are a critical tool for monitoring reproductive effort and long-term population trends. Traditional watercraft and aerial surveys often face challenges related to detectability biases, cost, access, human disturbance, and observer safety. Although currently underutilized, thermal unmanned aerial vehicles (UAVs) provide a viable alternative because they can detect the heat signatures of crocodylian mound nests, even under challenging environmental conditions. We evaluated the effectiveness of a UAV outfitted with thermal and visual sensors for detecting American alligator (*Alligator mississippiensis*) nests in Texas coastal marsh habitat. Using known nest sites, we conducted 66 drone flights across three altitudes (12.19 m [40 ft], 30.48 m [100 ft], 60.96 m [200 ft]) and three diel periods (morning [0600-1100], afternoon [1200-1900], and night [2100-2400]) to determine optimal thermal detection settings. Following data collection, imagery was processed into orthomosaics and validated against field-confirmed locations. Thermal imagery taken at 12.19 m altitude yielded significantly higher maximum temperatures, greater thermal range, and higher spatial resolution. Morning surveys featured lower ambient temperatures, enhancing thermal contrasts between nests and the surrounding vegetation. Nest detection rates declined at 60.96 m altitude and during afternoon flights due to reduced temperature differentials, as indicated by lower maximum temperatures, narrower thermal ranges, and higher minimum ambient temperatures. Overall, morning flights at 12.19 m provided the best detection; however, flights at 30.48 m offered a practical compromise between ground coverage and resolution. These findings support the use of thermal drones for efficient, non-invasive nest detection in monitoring efforts for mound-building crocodylian populations.

1:45 PM **Applications of GIS: Forage Productivity and Pastureland of Texas**

Kelley Mundy, Texas A&M University - College Station

Humberto Perotto, Texas A&M University

X. Ben Wu, Texas A&M University - College Station

Jeff Goodwin, NA

Merilynn Schantz, USDA Agricultural Research Service

Morgan Treadwell, Texas A&M Agrilife Extension

Abstract: Technological advances in remote sensing and geographic information systems have significantly expanded our ability to collect, store, analyze, and map ecological data. Two key resources are the Rangeland Analysis Platform (RAP), which provides annual estimates of biomass and vegetation cover, and the U.S. Census of Agriculture, which offers comprehensive agricultural statistics every five years. These are publicly available datasets and are widely used by researchers, landowners, and decision makers. Our objective was to explore if there is any potential relationship between biomass estimations (RAP) and changes in pastureland area (U.S. Census of Agriculture) at the county level across ecoregions in Texas. Biomass estimates and pastureland area data were collected for each county in five-year increments from 1997 to 2022. Regression analysis showed that five ecoregions (e.g., Blackland Prairie, Gulf Prairies, Piney Woods, Post Oak Savanna, and Trans-Pecos) exhibited significant positive relationships between increasing pastureland percentage and biomass (R^2 range = 0.17-0.53, all $p < 0.01$). The remaining ecoregions did not exhibit relationships between pastureland percentage and biomass. We hypothesize that these relationships could be driven by livestock production, property size, wildlife management enterprises, and urban development in each ecoregion. Our finding that pastureland percentage is correlated to biomass indicates that pasturelands provide stable forage availability to livestock and wildlife. When these resources are lost to other land uses (e.g., urban encroachment, energy development), production will likely decrease in these ecoregions. These findings also showcase the potential and limitations of publicly available datasets for informing stakeholders and management decisions.

2:00 PM **Short-Term Rainfall Events and Their Role in Shaping Vegetation Cover Structure in a Semi-Arid Rangeland**

Kylie Perez, Texas A&M University - College Station

Humberto Perotto, Texas A&M University

Conner Ties, Texas A&M University - College Station

Rider Combs, Texas A&M University - College Station

Sorin Popescu, Texas A&M University - College Station

Jacob Lucero, Texas A&M University - College Station

Morgan Treadwell, Texas A&M Agrilife Extension

Ty Werdel, Texas A&M University - College Station

Bethany Boggan, Texas A&M Department of Rangeland, Wildlife and Fisheries Management (RWFM)

Jeff Goodwin,

Abstract: Semi-arid rangelands are pulse-driven systems characterized by spatial and seasonal variation in vegetation structure. Understanding these dynamics is important for managing forage production and vegetation dynamics. The objective of our study was to evaluate vegetation responses to a rainfall pulse during the growing season in a semi-arid rangeland. We acquired high-resolution drone imagery and canopy height models at La Copita Demonstration Ranch in South Texas. We conducted drone flights two weeks before (03/12/2025), then two (04/12/2025) and six (05/12/2015) weeks after a rainfall event (03/26/2025, 5 cm). We derived canopy height models (pixel size = 8.2 cm) to quantify vegetation height and estimated plant volume for native grasses, invasive grasses, and woody vegetation. We collected field data to identify patches of native and invasive grasses. With this information, we randomly selected 20 sample areas (3 m diameter) for each vegetation cover type from the imagery. We used a nonparametric Kruskal-Wallis test ($\alpha = 0.05$) to assess differences between vegetation cover types. We did not observe significant differences within vegetation cover types between time periods. However, native grass volumes were approximately three times smaller than invasive grasses. Both grass types differed significantly from woody vegetation ($\chi^2 = 51.93$, $p < 0.05$). Our results likely reflect seasonal growth dynamics, suggesting that the rainfall occurred within an ongoing growth period and minimized the pulse-driven response. Our study shows the potential to use high-resolution data to assess landscape-level vegetation cover dynamics at very fine temporal scales.

2:15 PM **Developing Multiple-Scale Validation Tools to Quantify Forage Production in Rangeland Ecosystems**

Mollie Kemp, Texas A&M University - College Station

Silverio Avila-Sanchez, Borderlands Research Institute - Sul Ross State University

Sorin Popescu, Texas A&M University - College Station

Andres Cibils, USDA Southern Plains Climate Hub

Sarah McCord, USDA ARS

Conner Ties, Texas A&M University - College Station

Shanna Gleason, Texas A&M University - College Station

Nuria Gomez-Casanovas, Texas A&M Agrilife Extension

William E. Pinchak, Texas A&M AgriLife Research

Humberto Perotto-Baldivieso, Texas A&M University - College Station

Abstract: Balancing supply and demand of forage mass for livestock and wildlife operations is key for maintaining ecosystem function and sustainability. Traditional forage mass estimation by clipping aboveground forage samples in the field is both labor- and time-intensive. Remote sensing offers alternatives, although satellite imagery often introduces uncertainty with limited spatial and temporal resolution. In contrast, drone-based imagery offers scalable opportunities for forage estimation and can validate broader-scale platforms, such as the Rangeland Analysis Platform (RAP). Our goal is to use field data, drone-based imagery, and RAP data to better inform forage estimations in the Southern Great Plains, TX. To quantify forage mass, we collected 1.5-cm resolution RGB drone imagery to generate a canopy height model (CHM) at a 7-cm resolution at three locations throughout the growing season: Vernon (94 ha, 678 mm average annual precipitation) and Sweetwater (site 1: 51 ha, site 2: 99 ha; 592 mm average annual precipitation). We also collected 30 vegetation clippings per location per sampling event. We estimated forage mass from the CHM and from the vegetation clippings to analyze their relationship using linear regression. In Vernon, R^2 values ranged from 0.4424 to 0.6699 (three of the four samplings significant, $p < 0.05$). In Sweetwater, site 1 R^2 values ranged from 0.5666 to 0.8566 (two of the three samplings significant), and site 2 from 0.3463 to 0.8109 (three of the four samplings significant). These results will help establish relationships between drone-based imagery and RAP data to advance forage production estimates on an operational scale.

2:30 PM **The Good, The Bad, And The Ugly: Comparison of GPS Collar and Solar-Powered Ear Tag Technologies for Animal Tracking**

Dylan Stewart, Texas A&M University - College Station

Egleu Mendes, Texas A&M University - College Station

Thomas Batter, Bighorn Sheep Program, Wildlife Management Division, New Mexico
Department of Game and Fish

Jared Beaver, Montana State University

Marcus Blum, Texas A&M University - College Station

Mike Cox, Nevada Department of Wildlife

Jacob Dykes, Mississippi State University

MacKenzie Hoffman, Texas A&M University - College Station

Kaitlyn Piccora, Bighorn Sheep Program, Wildlife Management Division, New Mexico
Department of Game and Fish

Luis Tedeschi, Texas A&M University - College Station

Edward Tomassetti, Texas A&M University - College Station

Smith Wells, Department of Animal and Range Sciences, Montana State University

Ty Werdel, Texas A&M University - College Station

Stephen Webb, Texas A&M Natural Resources Institute

Abstract: Animal-borne GPS technology is advancing rapidly, offering new insights into animal ecology and improving management efficiency. Given this pace of innovation, it is essential to evaluate emerging GPS technologies, particularly those featuring autonomous solar charging and satellite, cellular, and Long-Range Wide-Area Network (LoRaWAN) data transmission. We quantified and compared the efficacy of GPS neck collars and solar-powered GPS ear tags for animal tracking using stationary tests under varying canopy cover conditions. Using a crossover design, we assessed GPS performance metrics, including fix acquisition probability (Pacq), horizontal error (HE), circular error probable (CEP), and, when applicable, battery longevity for 10 GPS technologies (7 collars, 3 ear tags) from 9 manufacturers. GPS performance was generally consistent across manufacturers, with minimal variation among performance metrics, and was largely unaffected by canopy cover. Devices using LoRaWAN exhibited consistently high Pacq across canopy conditions, though substantial differences in HE and CEP were observed. Track Tag and 701x ear tags demonstrated high Pacq, low HE and CEP, and sustained functionality throughout the study, indicating strong potential for wildlife applications. Horizontal error was randomly distributed around the centroid but not the true position, producing a systematic bias typically < 5 m. Collectively, these results suggest that GPS tags may provide high fix acquisition and location accuracy comparable to traditional GPS collars. Our findings can guide wildlife professionals in selecting technologies suited to their objectives and environments. However, these tests were conducted under stationary conditions, so performance metrics may be impacted by animal activity, behavior, and habitat selection.

2:45 PM **Seed-Spec: A Native Seed Blend Development Tool**

Brian Hays, Bamert Seed Company

Abstract: Establishing native vegetation in any restoration project can be a challenging task. The species and varieties that match the site must be identified and used to help ensure adequate establishment and persistence. Data exists to help project managers identify what species are native to a given area and commercially available, but can be cumbersome, not user friendly, and time consuming. Bamert Seed Company has worked with Colorado State University to develop a web application to easily identify a project area of interest (AOI) and provide information on native species composition for the AOI. The tool will provide a list of commercially available species that correspond to the plants that grow natively in the AOI and intuitively walk the user through developing a site-specific native seed blend. The recommended seeding rate from NRCS will be used to calculate the pounds of pure live seed (PLS) that will be needed for the project. Users will have the ability to adjust the seeding rate based on their establishment objectives and seeding method they will be using. Having this tool will allow the land manager a timely way to determine the best blend for their AOI and get the seed blend to a vendor/seed dealer with knowledge that the species selected will work for their specific site. We will discuss the importance of native plants and the benefits they bring to restoration projects such as adding biodiversity and improving soil health.

Wildlife Disease & Toxicology I

Ivy 1 & 2, February 19, 2026

Moderator: Claire Molina

1:30 PM **Patterns of Prevalence and Behavioral Responses to *Toxoplasma Gondii* in White-Tailed Deer in Southern Texas**

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

Alynn Martin, Caesar Kleberg Wildlife Research Institute

Tyler Campbell, East Foundation

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

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

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

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

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

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

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

Landon Schofield, East Foundation

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

Jason Sawyer, East Foundation

Michael Cherry, Caesar Kleberg Wildlife Research Institution

Abstract: *Toxoplasma gondii* is a behavior-altering parasite capable of shifting host decision-making with the potential to influence behavior and population dynamics. Despite its widespread distribution, *T. gondii*'s ecological effects remain poorly understood in free-ranging wildlife. Using blood screening and GPS-based movement data, we evaluated the prevalence and behavioral consequences of serostatus in white-tailed deer (*Odocoileus virginianus*) in southern Texas. Using samples collected in 2024, we documented seroprevalence ranging from 23–50% across five distinct populations. In this investigation, males were 2.4 times more likely to be positive than females. We used data from females captured and radiomarked between 2020–2023 within one of the populations to assess temporal patterns in prevalence and effects on movement, reproduction, and survival. Across this period, 49% (29/59) of radiomarked females were seropositive at capture or seroconverted during monitoring, with annual prevalence ranging from 30–43%. Seropositive individuals moved 1.78 times farther during the fawning season and selected habitats closer to roads—common corridors for predators—and sandier areas which are generally poorer quality habitat for deer. Although fawn survival remained uniformly low across years and adult female survival

was high regardless of infection status, observed patterns suggest infection may interact with environmental stressors (e.g., extreme winter conditions) to compound risk. Given that deer are both abundant game animals and intermediate hosts bridging environmental sources of infection and human exposure, our findings underscore *T. gondii* as an underappreciated factor linking wildlife ecology, management, and public health.

1:45 PM **Prevalence of Anticoagulant Rodenticides in Mesocarnivores in a Rangeland Ecosystem**

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

Clayton Hilton, Texas A&M University-Kingsville

Ashley Reeves, East Foundation

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

Julie Young, Utah State University

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

Abstract: Anticoagulant rodenticides (ARs) are a common form of rodent control implemented globally. The effects of rodenticides often extend beyond non-target wildlife and can impact raptors and carnivores through consumption of poisoned rodents. ARs can have lethal and sublethal effects, including impacts to reproduction and overall health. These effects are especially important when threatened and endangered species are at risk of exposure. Ocelots (*Leopardus pardalis*), a medium-sized felid, are endangered in the United States and their exposure to ARs has never been previously explored, despite rodents being part of their diet. While ocelots are spatially constrained to dense canopy vegetation in South Texas, USA, they overlap with more adaptable and wide-ranging mesocarnivores that also consume rodents: bobcats (*Lynx rufus*) and coyotes (*Canis latrans*). To determine whether ARs pose a threat to our target species, we tested livers for presence of common AR compounds from ocelots (n = 5), bobcats (n = 18), and coyotes (n = 16) collected from 2020 through 2025 across six counties in Texas. We found that 60% of ocelot, 5.5% of bobcat, and 25% of coyote liver samples were positive for at least one AR, with positive ocelot samples containing at least two unique compounds. Our results indicate that ARs are in use on the landscape and have the potential to impact ocelot recovery. More broadly, these findings underscore the unforeseen impacts of the use of ARs on non-target wildlife in the United States.

2:00 PM Impacts of Imidacloprid Exposure on Ring-Necked Pheasant Growth and Survival

Madison Ramsey, Texas Tech University
Courtney Ramsey, Texas Tech University
Warren Conway, Texas Tech University

Abstract: Ring-necked pheasants (*Phasianus colchicus*) are important upland gamebirds experiencing population declines throughout portions of its range. In the Southern High Plains of Texas, > 95% of the landscape is industrialized agriculture, with ubiquitous use of pre-planting seed treatment of neonicotinoid on rowcrop plants. Free-ranging pheasants commonly consume waste grains and exist in relatively constant contact with these insecticides, yet their impact on pheasant growth and physiology is unknown. We examined impacts of Imidacloprid on pen-raised pheasant blood chemistry and body mass during exposure to three concentrations of Imidacloprid treated feed. We used 64 pheasants for this study, where birds (equal sex ratios) were introduced to research pens at 16 weeks old (n = 64), and 7 weeks old (n = 32). Initial body mass and condition were recorded, and blood collected, after the 1-week acclimation period, and continued biweekly until termination. We found body mass varied among treatments, with some individuals losing up to 25% of their mass during the first week of exposure to the greatest concentration of Imidacloprid, while control birds gained mass throughout the experiments. We found normal mean total blood protein (3.5 g/dL) for control birds, while total protein in birds exposed to medium or high-level treatments were often < 3.0 g/dL, which indicates liver or kidney issues. Similarly, some individuals in low-medium treatments had ALKP (alkaline phosphatase) levels as high as ~3000 u/L, which indicates potentially severe liver disease. This research provides baseline information on impacts of Imidacloprid on pheasant growth and development.

2:15 PM Exploring Breeding Birds as Bioindicators of Plastic Pollution in San Antonio, Texas

Maribel Ortega, University of Texas at San Antonio

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

Abstract: Nestling birds in urban areas are exposed to macro- and micro-plastic (plastics larger and smaller than 5mm, respectively) via their food and nests, and thus may serve as bioindicators of plastic pollution. However, whether nestling plastic exposure is correlated with levels of plastic pollution in the area is unknown. Through the Urban Bird Project, a project that engages community in interdisciplinary environmental endeavors, this study aimed to assess plastic exposure of birds during the breeding season, concomitant effects on reproductive success, and viability of nestlings as bioindicators of plastic pollution. We predicted that nests and fecal sacs collected at sites with relatively low soil plastic loads would contain less plastic than those at sites with higher plastic loads; and because plastic exposure impacts endocrine processes and incubation temperatures, we predicted that higher plastic exposure would lead to lower hatching success. We monitored birds breeding in nestboxes placed across four sites which we anticipated would vary in soil plastic loads (e.g., due to geographic variation in waste management) in San Antonio, Texas. Fecal sacs were collected from nestlings 10-days post hatch, and nests following the breeding season. Thirty-six percent of fecal sacs (n=55) contained microplastics and 83% of nests (n=54) contained macroplastics, although the results were species-specific. However, there was no effect of site on plastic exposure ($p=0.87$). Future analysis of soil samples will help identify whether avian plastic exposure is linked to levels of plastic pollution in the environment, and thus whether nestlings can serve as bioindicators of plastic pollution.

2:30 PM **Early Results from a Medicated Feed Study to Reduce Eye and Cecal Worm Infestations in Northern Bobwhite Quail**

Ryan O'Shaughnessy, Rolling Plains Quail Research Foundation

Dan Foley, Rolling Plains Quail Research Foundation

Mitchell Riggs, Rolling Plains Quail Research Foundation

Kyndal Underwood, Rolling Plains Quail Research Foundation

Abstract: Parasite infestations, particularly eye worms (*Oxyspirura petrowi*) and cecal worms (*Aulonocephalus pennula*), may reduce health and productivity of northern bobwhite quail (*Colinus virginianus*) in the Rolling Plains. In 2024, the Rolling Plains Quail Research Foundation initiated a multi-year Medicated Feed Study to evaluate whether QuailGuard® medicated feed (fenbendazole-treated) reduces parasite loads and improves quail abundance under working-ranch conditions. After one year, we observed encouraging but preliminary trends. A broad submission dataset includes >400 quail samples from cooperating ranches using and not using QuailGuard®, enabling regional comparison across diverse management contexts. In addition, three intensively monitored study ranches were each stratified into replicated treatment (QuailGuard®), fed reference (identical feed without fenbendazole), and control units, with each unit encompassing ~2,000 acres. Parasite burdens were quantified through standardized necropsies, and population response was indexed using helicopter surveys and complementary field observations. Across both the submission dataset and replicated ranch units, quail from medicated-feed sites exhibited lower eye and cecal worm burdens relative to fed reference and control sites. Helicopter surveys also indicated a concurrent positive trend in quail numbers on treatment units. Because the study has been underway for < 1 year, treatment effects are not yet statistically significant. Sampling will continue for three additional years to increase power, capture interannual variability, and allow robust statistical testing of treatment effects on parasite intensity, prevalence, and quail density. These early findings support continued evaluation of fenbendazole-medicated feed as a practical, landscape-scale tool for parasite management and potential population recovery in bobwhite quail.

Conservation & Ecology of Mammals II

Salon F & G, February 19, 2026

Moderator: Daniel Kunz

3:15 PM **Effects of the Border Barrier System on Movement Behavior of a Large Carnivore**

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

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

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

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

Grant Harris, U.S. Fish and Wildlife Service

Dana Karelus, Texas Parks & Wildlife Department

Claudia Wultsch, City University of New York

Randy DeYoung, Texas A&M-Kingsville CKWRI

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

Clayton Hilton, Texas A&M University-Kingsville

Michael Cherry, Caesar Kleberg Wildlife Research Institution

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

Abstract: Anthropogenic structures like fences, walls, or highways can significantly impact wildlife by restricting movement and genetic connectivity among populations. These barriers are likely to disproportionately affect large-bodied, wide-ranging species such as mountain lions (*Puma concolor*). We examined whether the ~1,500-km U.S.–Mexico border barrier system impacted mountain lion movements in South Texas. We fit 3 mountain lions with GPS collars that increased fix rates to 1 location every 10 minutes when a lion was ≤ 1 km of the border barrier. We used a Barrier Behavior Analysis and an integrated step selection analysis to categorize individual movement behavior near the barrier and the influence of construction on lion movements. On average, individuals encountered the barrier 2 times per month. Nineteen of 24 barrier encounters (79%) resulted in altered movements. Lions avoided areas close to the barrier and had longer step lengths (i.e., moved faster) during construction than before construction. The barrier system includes a wildlife crossing every 500 m to facilitate population connectivity. However, no collared lion has used the available crossing structures in the border system, but during this study, they were able to cross where the barrier was not yet built. Our work suggests that disturbance during construction and the border barrier itself can affect movement behavior and habitat selection of a large carnivore, which may impact habitat connectivity and population persistence. Continued monitoring of wildlife movements near the border barrier will inform mitigation and management strategies locally and provide inference for at-risk carnivore populations globally.

3:30 PM **Barriers in the Brush: How Roads Shape Bobcat Movement and Connectivity**

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

Simona Picardi, Department of Fish and Wildlife Sciences, University of Idaho

Emma Brookover, Caesar Kleberg Wildlife Research Institute

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

Terry Hanzak, Caesar Kleberg Wildlife Research Institute

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

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

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

Thomas Yamashita, Colorado State University

John Young, Texas Department of Transportation

Michael Tewes, Texas A&M University - Kingsville

Abstract: Roads are a pervasive source of habitat fragmentation and mortality for wildlife, yet their effects on fine-scale movement patterns remain poorly understood for many carnivore species. In South Texas, ocelots (*Leopardus pardalis*) are a high-priority conservation species, but low densities and a restricted range limit direct study of their movement. Bobcats (*Lynx rufus*), which share life-history traits and occupy overlapping habitats, serve as a model for evaluating how roads influence felid movement and landscape connectivity. Using long-term GPS telemetry data from both species, we applied a Barrier Behavior framework to quantify road permeability and assess how road characteristics, traffic volume, and individual behavioral traits influence movement decisions. Specifically, we examined (1) whether high-traffic roads act as movement barriers, producing altered or trapped behaviors; (2) differences in movement behavior between resident and transient individuals; (3) variation in road-crossing frequency among individuals; and (4) how movement patterns can inform broader connectivity and conservation strategies for ocelots. By integrating GPS movement data with road and landscape metrics, this study identifies behavioral responses of bobcats to anthropogenic barriers at multiple spatial and individual scales. Identifying roads that limit movement, individuals that can navigate barriers, and the role of transient movements offers actionable guidance for conservation planning. This work supports evidence-based mitigation strategies, including targeted placement of wildlife crossing structures, to maintain functional connectivity for ocelots and sympatric carnivores in fragmented habitats. Ultimately, applying Barrier Behavior analysis to bobcats advances our ability to predict and manage road impacts on low-density felids in human-modified landscapes.

3:45 PM **Relative Habitat Suitability of the Gray Fox (*Urocyon Cinereoargenteus*) in the Central Great Plains**

Daniel Benson, Texas A&M University - College Station

Andrew George, Pittsburg State University

Adam Ahlers, Kansas State University

Emma Buckardt, Io

Christine Rega-Brodsky, University of Missouri

Abstract: Although once abundant across its range, the gray fox (*Urocyon cinereoargenteus*) is purported to be experiencing a decline within the Central United States. While range maps indicate gray fox potentially occur throughout this region, contemporary distribution maps are needed for targeted sampling and conservation action. We developed a Habitat Suitability Model for the gray fox across six states in the central United States using an ensemble method to examine landcover associations and model the distribution of relative habitat suitability for gray fox. The distribution of gray fox was discontinuous, with the largest patches of relative suitable habitat distributed in the southeastern edge of our study region, particularly in Arkansas. Relatively suitable habitat was best predicted by decreasing herbaceous cover and contagion, with increasing forest connectivity. Our findings suggest gray fox may have restricted relative suitable habitat compared to a historical range map. Thus, conservation action should target management of mosaic landscapes, including connected forest patches, to increase gray fox relative habitat suitability across the Central Great Plains.

4:00 PM **Habitat Selection by Gray Wolves on the Kenai Peninsula in Southcentral Alaska**

Seth Hawke,

Warren Conway, Texas Tech University

Courtney Ramsey, Texas Tech University

David Saalfeld, Alaska Department of Fish and Game

Abstract: After their extirpation in the early 20th Century, gray wolves (*Canis lupus*) recolonized the Kenai Peninsula in Southcentral Alaska by 1975. However, habitat use by this region's wolves has only been examined using VHF telemetry, which was limited by low spatiotemporal resolution and high error rates. Because wolves are highly adaptable, habitat use and selection can vary even among sympatric populations, and modern fine-scale GPS telemetry permits greater insight into habitat use patterns than previous methods. This information is useful when assessing habitat quality, risk of human-wildlife conflict, and predator-prey dynamics. We assessed wolf habitat selection on the Kenai Peninsula using ~560,000 GPS locations of 129 resident wolves from 2017 to 2025. We modeled effects of landscape covariates on wolf selection using step selection analysis, including topography, vegetation communities, and roads, then examined interactions with biological covariates including sex, age, and home range size. We also developed a predictive resource use model of moose (*Alces alces*), wolves' primary regional prey, with a resource selection function. For both wolves and moose, dominant vegetation class was the greatest predictor of selection across seasons based on ΔAIC . Both wolves and moose selected herbaceous and deciduous vegetation communities during winter, but in summer, wolves did not select deciduous vegetation. Additionally, distance to fire was the weakest predictor of wolf selection across seasons (β -0.003 summer, -0.002 winter) despite selection by moose (β 0.48 summer, 0.07 winter). This research will inform regional management of both wolves and moose.

4:15 PM **Assessment of Visual and Scent Lures as Successful Capture Methods for Felids and Other Mesocarnivores**

Meghan Murphy, East Foundation

Ashley Reeves, East Foundation

Landon Schofield, East Foundation

Georgia Harris, East Foundation

Aidan Branney, NA

Jason Sawyer, East Foundation

Lindsay Martinez, East Foundation

Alynn Martin, Caesar Kleberg Wildlife Research Institute

Abstract: It is important to investigate and implement strategies that can improve the capture success of endangered carnivores while reducing human effort and risk to animals. In South Texas, ocelots (*Leopardus pardalis*) are a federally endangered species. To minimize risk to ocelots, capture efforts for research in Texas are limited to box trapping, but capture success is low. We empirically tested if visual and scent lures can increase capture success of ocelots and other co-occurring mesocarnivores with box traps baited with a live bird on a large private ranch in a Texas-Tamaulipan thornscrub ecosystem. From December 2023 through April 2024 using a randomized design, we placed visual (hanging compact disc (CD) or shiny ribbon) and scent (civet musk or ocelot urine) lures at a total of 20 box traps and established five control traps across three temporally and geographically discrete trapping sessions for 75 trapping locations. We used a linear regression to assess 2,900 trap nights and found that scent nor visual lures impacted capture success of our target species: ocelots, bobcats (*Lynx rufus*), and coyotes (*Canis latrans*). Further, lures did not impact capture of by-catch. Based on our findings, we cannot recommend using CDs, ribbon, civet musk, or ocelot urine as lures to increase box trapping success. We suggest that ocelot researchers prioritize other strategies to increase capture success (e.g., setting additional traps) rather than setting up traps with the lures we tested.

Conservation & Ecology of Birds II

Vine 1 & 2, February 19, 2026

Moderator: Audrey Taulli

3:15 PM **Resource Selection of White-Winged Doves Breeding Across an Urban Gradient in Texas**

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

Owen Fitzsimmons, Texas Parks & Wildlife Department

Jordan Giese, Caesar Kleberg Wildlife Research Institute

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

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

Abstract: Since the 1980s, the white-winged dove (*Zenaida asiatica*) has greatly expanded its range from its historical breeding grounds in the Lower Rio Grande Valley (LRGV) of southern Texas. It now occurs throughout Texas, predominately breeding in urban areas. Yet, the effects of urbanization on this important game species are unknown, precluding informed management plans. The objective of this study was to investigate the effects of urbanization on home range size and resource selection of breeding white-winged doves. We predicted that home ranges in suburban areas would be smaller compared to those in urban and rural areas due to the prevalence of mature trees and bird feeders that allow doves to reduce their space use. We also predicted urban birds would select areas near residential buildings and green spaces due to access to bird feeders and foraging grounds whereas rural birds would select areas near preferred crops for foraging. Between May and August 2025, we affixed GPS-GSM solar-powered transmitters to 76 doves in urban, suburban, and rural sites across urban gradients in Houston and San Antonio, Texas and a state park in the LRGV, which served as a control site (urban n = 27, suburban n = 22, rural n = 17, control n = 10). Using collected locations, we constructed 95% kernel density home ranges and evaluated resource selection of white-winged doves using geospatial data. Results from this study will be used to inform habitat management guidelines for urban-breeding white-winged doves in Texas.

3:45 PM **Comparative Habitat Analyses for Co-Occurring Texas Raptor Species: Zone-Tailed Hawks, Gray Hawks, And Common Black Hawks**

Sarah Montalvo, Texas Tech University

Will Britton, Texas Tech University

Clint Boal, US Geological Survey

Brent Bibles, Unity College

Tania Homayoun, Texas Parks & Wildlife Department

Abstract: Zone-tailed Hawks (*Buteo albonotatus*), Gray Hawks (*Buteo plagiatus*), and Common Black Hawks (*Buteogallus anthracinus*) are listed as species of greatest conservation need in Texas and are considered state threatened. These species are known to nest in riparian habitat along perennial and intermittent streams in the Chihuahuan Desert and western edge of the Edwards Plateau ecoregions. There is limited nesting habitat information for these raptor species in these two ecoregions, as well as limited comparative analyses of fine scale habitat selection that may be occurring among these species. We collected nest site measurements at 14 Zone-tailed Hawk, eight Gray Hawk, and seven Common Black Hawk nests during the 2025 breeding season. We conducted habitat measurements within a 11.4 m radius of the nest tree and at a paired randomized location 23 m to 50 m from the nest tree. Site data collected included an array of measurements for the nest tree, other trees within the site, water presence or absence, distance to water, and composition of ground cover. We are comparing characteristics of nest sites to those of random locations for each species and then comparing the collective nest site data among the three raptors. This will allow finer scale nesting habitat evaluations to assess how resource partitioning among these species may facilitate their co-occupancy of limited riparian areas.

4:00 PM **Using Automated Recording Units to Estimate Habitat Availability and Occupancy of Mexican Spotted Owls in Texas**

Clint Boal, US Geological Survey

Brent Bibles, Unity College

Abstract: The Mexican spotted owl (*Stix occidentalis lucida*) is a federally protected species whose occurrence in the Trans-Pecos region of Texas is poorly understood. No systematic survey has been attempted for the species in Texas, hampering informed decisions and conservation planning. We surveyed for Mexican spotted owls in the Trans Pecos, modeled habitat suitability based on characteristics of occupied areas, and developed an estimate of population size given probable habitat availability and known territory size from elsewhere. We developed a naïve preliminary habitat model to identify sampling areas. In March 2024, we used this model to guide deployment of automated recording units (ARU) to passively record animal vocalizations during programmed listening periods. Upon retrieval we analyzed the recordings for Mexican spotted owl vocalizations and confirmed presence at 19 of 83 deployment locations among 3 of 4 sampled mountain ranges. We used these data to build an informed habitat probability model to map likely habitat across the Trans Pecos region. The best model suggested owl presence was associated with deep narrow canyons and high elevations, and dissociated with deep shade, and that approximately 64 km² among 6 mountain ranges are suitable for Mexican spotted owl occupancy. Applying the spatial extent used for Protected Activity Centers of known pairs of owls to our model of suitable habitat available, it is reasonable that 14–16 pairs of Mexican spotted owls may be present in the Trans Pecos region of Texas.

4:15 PM **Temporal Distribution of High-Elevation Owls in the Davis Mountains, Texas**

Shelby duPerier, Sul Ross State University

Romey Swanson, Devils River Conservancy

Justin French, Borderlands Research Institute - Sul Ross State University

Maureen Frank, Borderlands Research Institute - Sul Ross State University

Abstract: Several mountain ranges within the Chihuahuan Desert receive more precipitation and experience cooler temperatures than the surrounding lowland desert. This “sky island” effect creates diverse ecosystems within the mountain range, which support high-elevation bird species uncommon to the region. Due to the rugged and remote nature of the Chihuahuan Desert mountains, the occurrence and distribution of high-elevation species are poorly understood, especially for nocturnal birds. Passive acoustic monitoring, paired with deep learning neural networks, shows promise for increasing the detection of elusive birds. This study aims to evaluate vocal patterns and trends of nocturnal bird species in the Davis Mountains, particularly flammulated (*Psiloscops flammeolus*) and northern saw-whet (*Aegolius acadicus*) owls. Using autonomous recording units (ARUs), owls were monitored in 2024 and 2025 at the Davis Mountains Preserve (DMP). Data were collected from March through August, coinciding with the breeding season, when calling activity is most frequent. Twenty-five ARUs were deployed across the DMP in suitable owl habitat and programmed to record during peak vocal activity (2-3 hours after sunset and 1 hour before sunrise). Audio recordings were processed using BirdNET. Preliminary results confirm the presence of all three target species within the preserve. Subsequent analyses will refine ARU recording times and placement, identify peak calling periods, and separate calling activity based on territory defense, mating calls, or predator response.

Wildlife Disease & Toxicology II

Ivy 1 & 2, February 19, 2026

Moderator: Hannah Shapiro

3:15 PM Modeling Chronic Wasting Disease Transmission Among Deer and Elk in the Texas Panhandle

Ashlyn Halseth-Ellis,

Alynn Martin, Caesar Kleberg Wildlife Research Institute

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

Michael Cherry, Caesar Kleberg Wildlife Research Institution

Warren Conway, Texas Tech University

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

Walter Cook, Texas A&M University - College Station

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

Justin French, Borderlands Research Institute - Sul Ross State University

Shawn Gray, Texas Parks & Wildlife Department

Levi Heffelfinger, Caesar Kleberg Wildlife Research Institute - Texas A&M University – Kingsville

Abstract: Chronic Wasting Disease (CWD) is a fatal disease known to infect members of the cervid family and likely others. In Texas, CWD occurs sporadically in free-ranging Cervid populations across the state. The Texas Panhandle is particularly notable because it has three sympatric susceptible species—white-tailed deer (*Odocoileus virginianus*), mule deer (*O. hemionus*), and elk (*Cervus canadensis*)—all of which have documented CWD detections in this region. As CWD poses economic and ecological threats, understanding disease dynamics in this area is critical. To address this, we GPS-collared white-tailed deer (n = 42), mule deer (n = 38), and elk (n = 24) in the Texas Panhandle in February 2025. Using empirical movement parameter estimates, we developed an agent-based model that simulates site-, species-, age-, and sex-specific cervid movement to forecast CWD dynamics in this region. The model simulates 2 years with each time step representing one day. Initial models indicate CWD prevalence remained below 5% for the duration of the simulation. Individual CWD risk was driven by group dynamics (e.g., if one animal got infected in a group, the entire group got infected) as opposed to demographic-specific movement rates (e.g., despite adult bull elk moving more than any other demographic group, only two elk were infected). Our agent-based model highlights the importance of understanding of group dynamics among free-ranging cervids when developing site-specific management strategies and will be used to inform and test proposed management strategies.

3:30 PM You Belong in My Network—A Novel Approach to Understanding M. Ovi Transmission in Texas

Angela Patrick, Texas Tech University

Warren Conway, Texas Tech University

Justin French, Borderlands Research Institute - Sul Ross State University

Courtney Ramsey, Texas Tech University

Abstract: Aoudad (*Ammotragus lervia*) are an exotic invasive species in the Trans-Pecos of Texas that now exceed 20,000 individuals regionally. Disease surveillance from the last 5 years indicated that ~60% of aoudad tested are seropositive for *Mycoplasma ovipneumoniae* (*M. ovi*), highlighting their potential role in regional disease dynamics. Aoudad are highly gregarious, exacerbating concern regarding transmission risk to native bighorn sheep (*Ovis canadensis nelsoni*). We used GPS-collar data from 15 (n = 13 rams, n = 2 ewes) aoudad in the Van Horn Mountains to quantify movement indices and habitat selection using integrated Step Selection Functions (iSSFs). Aoudad selected steeper slopes ($\beta = 0.028$, 95% CI = 0.017-0.040) with movement behavior varying between diel periods. Aoudad used rugged, mid-elevation terrain which could facilitate concentration, suggesting predictable contact zones for disease transmission. We found substantial individual variation using Principal Components Analyses in resource selection, where PC1 captured 36% of variance in selection strength across vegetation and terrain. Behavioral heterogeneity may create heterogeneous contact networks, with individuals exhibiting different selection strengths, and potentially serving as variable-risk nodes for *M. ovi* transmission. We will use these results to develop spatially-explicit network models to quantify potential transmission pathways and high-risk nodes (individuals) for *M. ovi*. This novel approach will link aoudad behavior with epidemiological risks to bighorn sheep.

3:45 PM **Potential for *Mycoplasma Ovipneumoniae* Viability in Freshwater Environment**

Chris Carter, Texas Tech University

Warren Conway, Texas Tech University

Justin French, Borderlands Research Institute - Sul Ross State University

Courtney Ramsey, Texas Tech University

Patricia Brewster, Montana State University

Abstract: *Mycoplasma ovipneumoniae* M (*M. ovi*) is partially responsible for population declines of bighorn sheep (*Ovis canadensis*) throughout North America. In West Texas, water guzzlers are a primary management tool, but may be foci for disease transmission. No published experiments have determined whether these waterers could be sources of direct transmission for *M. ovi*. We conducted a pilot study to assess potential viability of *M. ovi* in aqueous solutions. We inoculated tap water with cultured *M. ovi* and then collected samples at 1-, 2-, 4-, 24-, 48-, and 72 hours post-inoculation. We immediately tested one sample via real time quantitative polymerase chain reactions (RT-qPCR) and recorded cycle threshold (CT) values. We incubated a second sample from each time point in sugar phosphate⁴ (SP4) broth for up to a week to test for viability and then used RT-qPCR to assess regrowth potential by comparing CT values. We found *M. ovi* to likely be viable up to 48 hours post-inoculation. We used a Wilcoxon signed-rank test to examine differences between CT values between initial water samples and those re-cultured, where CT values declined by 50% after incubation ($P = 0.008$), indicating *M. ovi* was likely growing. To further examine viability, we exposed *M. ovi* in aqueous solution to an ultraviolet light (UV) source in a biosafety cabinet for 12 hours, where we found *M. ovi* was no longer potentially viable, as no regrowth occurred. We are performing in-situ experiments to determine pace and timing of UV light impacts on *M. ovi* viability.

4:00 PM **Efficacy of Medgene Vaccine to Combat Rabbit Hemorrhagic Disease Virus 2 in Wild-Caught Cottontails**

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

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

Dana Karelus, Texas Parks & Wildlife Department

Angela Bosco-Lauth, Colorado State University

Scott Henke, Texas A&M University-Kingsville

Alynn Martin, Caesar Kleberg Wildlife Research Institute

Abstract: Rabbit hemorrhagic disease virus 2 (RHDV2) is a highly transmissible pathogen that causes up to 80% mortality in lagomorphs, rapidly (~2 days), via internal hemorrhaging. Since its first documentation in wild lagomorphs in the United States (New Mexico, March 2020), RHDV2 has spread throughout the western US and is now considered endemic. While culling has proven the most effective management strategy for combating the spread of RHDV2, it cannot be recommended for vulnerable species like the Davis Mountains cottontail (DMC; *Sylvilagus holzneri robustus*). A vaccine by MedGene® has proven successful in mitigating disease in domestic rabbits; however, the vaccine's efficacy in DMCs is unknown. Our objective was to compare antibody production in eastern cottontails (*S. floridianus*) as a surrogate for DMC. Rabbits were given either the recommended two dosages of vaccine, a single dosage, or a control placebo. Blood was obtained prior to treatment, then weekly for six weeks after to determine antibody development against RHDV2 via enzyme-linked immunosorbent assays. No difference in antibody concentrations were observed before treatment. Two weeks after treatment, antibody concentrations were significantly different between the control and vaccine treatments. In the two-dose group, antibodies doubled following the administration of the second dose. At six months post-second vaccination, all treatment groups will be challenged with RHDV2 to determine the efficacy of single-dose versus double-dose vaccine in wild lagomorphs. It may not be feasible on a large scale to provide the recommended dosage to wildlife; however, the vaccine may provide some protection against possible RHDV2 re-emergence.

Conservation & Ecology of Reptiles & Amphibians

Salon B, February 19, 2026

Moderator: Erin Wehland

03:15 PM **Habitat Preferences of the Plateau Spot-Tailed Earless Lizard** **(*Holbrookia Lacerata*)**

Kathryn Steffen, Texas A&M University Natural Resources Institute

Danielle Walkup, Texas A&M AgriLife Research

Toby Hibbitts, Texas A&M University Natural Resources Institute

Douglas Tolleson, Texas A&M AgriLife Research

Sorin Popescu, Texas A&M University - College Station

Paul Crump, Texas Parks & Wildlife Department

Wade Ryberg, Texas A&M University - College Station

Abstract: The Plateau Spot-tailed Earless Lizard (*Holbrookia lacerata*) is endemic to Central Texas semi-desert grasslands of the Edwards Plateau. Although the U.S. Fish and Wildlife Service decided in 2024 not to list the species under the Endangered Species Act, it remains a species of greatest conservation need in Texas. Previous research suggested that *H. lacerata* are most often found on bare ground and are less likely to be found in dense grass or brushy areas. Rangeland management practices such as grazing and prescribed fire can produce landscape mosaics with more frequent patches of bare ground, which may be better habitat for *H. lacerata*. Between April and June 2022-2024, we conducted visual encounter surveys for *H. lacerata* at the Texas A&M AgriLife Research Station at Sonora in Edwards County. The Station has researched long-term control, grazing, and fire management treatments for decades, providing well-documented rangelands. We accumulated a total of 135 *H. lacerata* detections (including recaptures and unmarked detections). We also conducted relocation surveys using telemetry and microhabitat surveys in all plots and at all marked-lizard encounter sites. We detected *H. lacerata* at higher abundances in areas with at least some burning or grazing, or both, compared to control sites. We found that in plots used by *H. lacerata* versus those available but unused, lizards preferred microhabitats with more bare ground, gravel, and fewer oak trees. Thus, common rangeland management treatments, like grazing and prescribed fire, that reduce detritus and tree cover can be beneficial to this species.

3:30 PM **Modeling Functional Habitat Networks or Texas Indigo Snakes Along the U.S.-MX Border in South Texas**

Samantha Dillon, Texas A&M University Natural Resources Institute

Logan Wirth, Texas A&M University Natural Resources Institute

Reece Allen, Texas A&M University - College Station

Wade Ryberg, Texas A&M University - College Station

Toby Hibbitts, Texas A&M University Natural Resources Institute

X. Ben Wu, Texas A&M University - College Station

Danielle Walkup, Texas A&M AgriLife Research

Abstract: Anthropogenic disturbances that result in extensive habitat losses and structural alterations to habitat are a leading cause of global biodiversity loss. The borderland of South Texas, USA is a uniquely biodiverse region that has been heavily modified by anthropogenic activities, including urban development and agriculture. Potentially compounding these issues, the U.S.-MX international border barrier has been of heightened geopolitical and ecological concern in recent decades. Herpetofauna are vulnerable to anthropogenic disturbances, and habitat requirements for many species are not well understood. The Texas Indigo snake (*Drymarchon melanurus erebennus*) is an under-studied colubrid snake and a hallmark species of the thornscrub brushlands of southern Texas and northeast Mexico. Although downlisted from state threatened in 2020, development of natural areas and impermeable barrier infrastructure may threaten future populations. Therefore, we sought to estimate both suitable habitats and functionally connected habitat networks for *D. m. erebennus* using ensemble habitat suitability modeling and graph theoretical landscape analysis in Cameron, Hidalgo, Starr, and Zapata counties. Suitable habitats occur in moist, vegetated lowlands, and those habitats were fragmented into numerous small patches. Connectivity modeling identified urbanization as the greatest impact to habitat connectivity for *D. m. erebennus*. Border barrier infrastructure does not impede movements where gaps of vegetation are maintained between concrete sections of the barrier. Our study is the first to examine habitat requirements for *D. m. erebennus* to aid in future studies on this snake and can inform conservation efforts focused on mitigating long-term ecological impacts posed by the border barrier in South Texas.

3:45 PM **Interactive Effects of Resource Gradients and Environmental Stressors on Amphibian Oviposition Site Selection**

Caleb Mullins, Stephen F. Austin State University

Christopher Schalk, USDA Forest Service

Daniel Saenz, USDA Forest Service

Matthew McBroom, Stephen F. Austin State University

Reuber Antoniazzi, Stephen F. Austin State University

Gabriel Andrade-Ponce, Stephen F. Austin State University

Cord Eversole, Stephen F. Austin State University

Abstract: Oviposition site selection is critical to the reproductive success of pond-breeding amphibians, as larval development often occurs without parental care and is highly sensitive to habitat conditions. Although these decisions are shaped by biotic and abiotic cues, including predators, hydroperiod, habitat quality, and resource availability, cue reliability may vary across habitats. Invasive plants, including Chinese tallow (*Triadica sebifera*), may further interact with these factors and modify habitat cues, influencing both adult perception and larval survival. However, how multiple ecological filters jointly influence oviposition behavior remains less understood. To address this gap, we conducted a factorial mesocosm experiment manipulating wetland size, leaf litter species, predator presence, and monitored the presence of adults, eggs, tadpoles. Two dipnet surveys assessed tadpole density and recruitment. Adult preference varied significantly by sex and predator presence, with males far outnumbering females. Predator-free wetlands, especially large control and oak litter wetlands, attracted more adults. However, these trends were not significant once accounting for random effects. Egg presence was time dependent, peaking mid-season in small, predator-free wetlands and declining in large or predator-present patches. Wetlands containing Chinese tallow leaf litter were consistently avoided under these high-risk conditions, although litter type alone was not a significant predictor. Recruitment failure increased with predator presence, while small wetlands and pine litter had significant, independent positive effects on recruitment. Our results indicate that dynamic cues, rather than static habitat features, shape oviposition decisions, and invasive species can heighten reproductive stress. These findings emphasize incorporating temporal variation and invasive species into conservation strategies.

4:00 PM **Top Predators, Depth, and Seasons Drive Patterns of Tadpole Diversity in Artificially Constructed Ponds**

Tatiana Suarez Joaqui, Stephen F. Austin State University

Daniel Saenz, USDA Forest Service

Cory Adams, USDA Forest Service

Toby Hibbitts, NA

Kathryn R. Kidd, Stephen F. Austin State University

Reuber Antoniazzi, Stephen F. Austin State University

Cord Eversole, Stephen F. Austin State University

Carmen Montana, Stephen F. Austin State University

Christopher Schalk, USDA Forest Service

Abstract: Ponds created to provide recreational opportunities and enhance game species' habitat benefit other non-target species, such as amphibians. To better understand the factors that contribute to amphibian diversity across landscapes, we surveyed 25 artificial ponds in East Texas across two time periods (2007–2008; 2021–2023) to assess how different top predators (largemouth bass, green sunfish, salamanders) influence larval anuran diversity. As some ponds shifted in predator identity during the study (i.e., from salamander to green sunfish), we also tested the effect of top predators using a Before–After–Control–Impact (BACI) framework. Across all surveys, we registered more than 13,000 tadpoles across 11 species. Ponds with predators supported the highest species richness, while ponds with largemouth bass or green sunfish had fewer tadpole species. When assessing which factors co-varied with predators, we found a decrease in species richness with increasing pond depth. Similarly, less species richness was observed by seasons sampled (e.g., fall and winter). Local Contribution to β -diversity indicated moderate variation across ponds, in which species richness differences, and not turnover, was the main component driving species composition. Results from the BACI analysis showed that ponds that changed top predators (salamanders to green sunfish) between the two time periods experienced a strong decline in species richness, not reflected in β -diversity. Our results indicate that managing a network of different ponds, mostly dominated by shallow ponds and salamander predators, can promote a comprehensive strategy to maintain amphibian communities across East Texas landscapes while still maintaining recreation and game species.

Conservation & Ecology of Mammals III

Salon F & G, February 20, 2026

Moderator: Meghan Riley

9:00 AM Dispersal Patterns of a Recolonizing Population of Black Bears in Texas

Caitlin Camp, Borderlands Research Institute - Sul Ross State University

Justin French, Borderlands Research Institute - Sul Ross State University

Nicole Dickan, Borderlands Research Institute - Sul Ross State University

Amanda M. Veals Dutt, Borderlands Research Institute - Sul Ross State University

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

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

Louis Harveson, Borderlands Research Institute - Sul Ross State University

Abstract: Black bears (*Ursus americanus*) once occurred throughout North America, but because of unregulated harvest and habitat fragmentation, populations declined in the early 1900s. With changing public attitudes and effective management and regulatory practices, populations persisted and have even increased in North America. In Texas, bears are naturally recolonizing after decades of absence and are returning to a significantly human-altered landscape. To better understand this recolonization, we sought to examine how environmental factors affect the dispersal behavior of bears by fitting GPS collars to 23 (14 M, 9 F) bears in west Texas from 2022 to 2024. We used hidden Markov models (HMM) to differentiate localized and diffusive movement states, then fit integrated step selection functions (iSSF) to evaluate state-specific habitat selection. Hidden Markov models indicate bear movement is best described by four behavioral states, which we interpret as resting, foraging, traveling, and a distinctive behavior when using point attractants, with the top model including sex, day of year, and hour of day on state transition probabilities. Individual iSSFs showed considerable variation in coefficient estimates across individuals in the traveling state (e.g. elevation: mean = 0.005, SD = 0.703, range = -1.92–1.75), but at the population scale, bears selected for areas with greater vegetative productivity ($\beta = 0.45$, SD = 0.30) while avoiding landscape concavity ($\beta = -0.26$, SD = 0.25) and ruggedness ($\beta = -0.13$, SD = 0.37). These findings can provide insight into important movement corridors and help identify key areas of landscape connectivity for a recolonizing population.

9:15 AM Using Simulated Movement Paths to Assess the Performance of Spatially Explicit Capture-Recapture Study Designs for Estimating Abundance of Black Bears in the Trans-Pecos, Texas

Matt Hewitt, Borderlands Research Institute - Sul Ross State University

Justin French, Borderlands Research Institute - Sul Ross State University

Dana Karelus, Texas Parks & Wildlife Department

Amanda M. Veals Dutt, Borderlands Research Institute - Sul Ross State University

Warren Conway, Texas Tech University

Louis Harveson, Borderlands Research Institute - Sul Ross State University

Abstract: Black bear (*Ursus americanus*) recolonization in western Texas creates new management challenges and opportunities, but managers lack basic information to guide management decisions. Informed management of recolonizing species requires a framework for estimating population size and distribution, which we currently lack. Many states pair genetic samples and spatially explicit capture-recapture (SECR) models for this purpose, but region-specific considerations challenge traditional sampling methodology. To effectively estimate abundance within western Texas, we must understand how to effectively sample a recolonizing population with extreme interindividual variation over a large, partially accessible, and highly variable environment. We used behavioral-state specific integrated step selection functions, fit to empirical movement data, to simulate realistic black bear movement paths in real environmental contexts. We then created detection histories by simulating the interaction process between paths and detectors under 64 scenarios. Within properties allowing access, we varied the distance between detector clusters and the allowable distance of individual detectors from roads. We found density estimates were predictably biased low, averaging 72.5% (64.2% - 82.0% 95% Prediction Limit) of the true population size, and a strong relationship ($r^2 = 0.872$) between CV of density estimates and detector cluster spacing, road buffer distance, and simulated population size. The optimal cluster spacing and road buffer for moderate density scenarios are 15.2 km and 232 m, respectively. We found that spatial constraints in sampling produced predictable biases that can be accounted for to produce meaningful estimates from biased samples, allowing for accurate and reliable estimates of black bear abundance.

9:30 AM Temporal and Environmental Drivers of Mesocarnivore Capture When Targeting Ocelots in South Texas.

Haylee Pearce, East Foundation

Tyler Campbell, East Foundation

Meghan Murphy, East Foundation

Ashley Reeves, East Foundation

Lindsay Martinez, East Foundation

Alynn Martin, Caesar Kleberg Wildlife Research Institute

Landon Schofield, East Foundation

Jason Sawyer, East Foundation

Abstract: Live capture of carnivores is necessary for many research and conservation objectives but can be time-consuming, expensive, and stressful for animals. We investigated the exact capture timing of mesocarnivores and evaluated how environmental factors, including weather (temperature, precipitation, wind, humidity, and pressure) and moon illumination, affect capture success of free-ranging ocelots (*Leopardus pardalis*), bobcats (*Lynx rufus*), and coyotes (*Canis latrans*) in South Texas. Our study utilized data from >200 carnivore trapping events from 2011-2025 on private properties. From 2011-2024 we had 73 ocelot captures, 100 bobcat captures, and 37 coyote captures. The 2025 season also included time trap transmitters and Kestrel weather meters to record exact capture times and real-time, local weather data, respectively. In 2025, we captured 14 ocelots, 7 bobcats, and 2 coyotes. Ocelot captures occurred between 8PM and 4AM, bobcats between 6:45PM and 6:45AM, and coyotes at approximately midnight. Capture data were assessed in the context of weather and lunar cycle to identify ideal environmental conditions for successful captures. Across all years, captures occurred throughout the moon cycle and during diverse weather. The results on timing and environmental conditions will be used in future trapping efforts to utilize the best time windows and weather conditions for live captures of target species, with the goal of increasing capture success and reducing trap time to improve animal welfare and field efficiency.

9:45 AM Selection for Resource Stability Differs Among Sympatric Carnivores During Drought

Matthew Smith,

Ashley Reeves, East Foundation

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

Michael Tewes, Texas A&M University - Kingsville

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

Abstract: Global environmental change is reshaping climatic conditions, affecting species and community ecology. As a result, conservation and management efforts face the growing challenge of restoring species in ecosystems that differ markedly from historical baselines. Climate extremes like drought are increasing in frequency and severity and can be challenging for animals both physiologically and behaviorally when resources are limited and the costs to forage, avoid predators, and find mates increase. However, few studies have quantified how drought affects movement, activity patterns, and resource selection within a community of sympatric carnivores. To better understand the role of drought on community dynamics and species recovery, we estimated activity and habitat selection of the federally endangered ocelot (*Leopardus pardalis*; n=33) and two sympatric carnivores (bobcat *Lynx rufus* [n=55]; coyote *Canis latrans* [n=7]) across periods of drought in South Texas, USA from 2015-2025. We found the extreme drought conditions compressed activity to nocturnal time periods for ocelots, bobcats, and coyotes. In addition, we found that ocelots responded to drought by increasing selection for areas of resource stability, likely reducing the energetic cost of searching or minimizing the cost of moving during times of resource scarcity. Drought poses difficult challenges for management with limited tools to mitigate climate, but understanding behavioral changes and physiological limitations is critical to evaluate progress toward species recovery and promote persistence.

Conservation & Ecology of Birds III

Vine 1 & 2, February 20, 2026

Moderator: Jordan Giese

9:00 AM Beach-Nesting Bird Conservation on the Upper Texas Coast

Sarah Belles, American Bird Conservancy

Anna Deichmann, American Bird Conservancy

Abstract: Since 2012, American Bird Conservancy and partners have monitored populations of imperiled beach-nesting bird species along the Texas Coast. Through habitat protection, population monitoring, and public outreach, our group aims to stabilize and improve populations of at-risk species including the Wilson's Plover (*Charadrius wilsonia*), Least Tern (*Sternula antillarum*), Snowy Plover (*Charadrius nivosus*), and Black Skimmer (*Rynchops niger*). In 2025, select nesting sites on the Upper Texas Coast were posted using the Florida Shorebird Alliance 2012 protocol. Sites were surveyed 2-3 times per week for counts of adults, pairs, nests, and chicks from March to August. Solitary nests were monitored until hatched or failed, and banded chicks were followed to fledging. Disturbances were counted within 50 meters of nesting areas. We conducted opportunistic outreach while monitoring and provided on-site stewardship on busy weekends and holidays. In 2025, over 500 acres were monitored and 1,278 acres were protected across 8 sites on the Upper Texas Coast. We estimated that 23 breeding pairs of Wilson's Plover, 211 pairs of Least Terns, and 1 pair of Snowy Plovers were present between the 8 sites. Of 32 Wilson's Plover nests located, about 50 percent hatched, with predation being the most common cause of failure. Top nesting site disturbances included vehicles, beach-goers, grackles, and laughing gulls. Historical data shows an overall downward trend in the number of breeding pairs for each of our target species over time. Ongoing monitoring efforts serve to garner reproductive datasets that will help to set conservation goals and inform management decisions along the Texas

9:15 AM The Waterbird Colony Island Network Design and Implementation (Cindi) Project as a Tool for Guiding the Rehabilitation of Texas Colony Islands

Dale Gawlik, Harte Research Institute, Texas A&M University Corpus Christi
David Essian, Harte Research Institute, Texas A&M University Corpus Christi
Jessica Magolan, Harte Research Institute, Texas A&M University Corpus Christi
Liam Wolff, Harte Research Institute, Texas A&M University Corpus Christi
James Gibeaut, Harte Research Institute, Texas A&M University Corpus Christi
David Newstead, Coastal Bend Bays & Estuaries Program
Bart Ballard, Texas A&M University - Kingsville
Matthew Streich, Harte Research Institute, Texas A&M University Corpus Christi
Jordan Giese, Caesar Kleberg Wildlife Research Institute

Abstract: There are over 300 coastal islands in Texas that collectively provide nesting habitat for >300,000 colonial waterbirds annually. However, these colony islands are eroding, potentially limiting waterbird nesting populations. Therefore, the CINDI project was initiated using a coproduction framework incorporating socio-economic factors into analyses of waterbird population and habitat metrics to reduce key uncertainties and to guide island rehabilitation. One key uncertainty, change in area of nesting substrate types (vegetated and unvegetated), was analyzed using digitized aerial imagery of 213 islands along the Texas coast south of Aransas Pass for the years 1995, 2008, 2012, and 2018. Overall, islands lost emergent substrate at a median rate of 2.2% per year, bare substrate at 3.0% per year, and vegetated substrate at 1.9% per year. Twenty-three islands (11%) became permanently submerged over the study period. For a subset of 183 islands for which we had the same covariates, percentage of habitat loss was highest for small islands, islands with low elevation, and those with a low percentage of vegetated cover. Islands located close to navigation channels and those with a long fetch to the northwest or southeast also had high rates of loss. If habitat loss continues at, or above, the observed rates, >50 more islands will be submerged by 2060, underscoring the urgent need for rookery island restoration to sustain colonial waterbird populations in Texas.

9:30 AM A Wild Egret Chase: Disentangling the Impacts of Vegetation Communities on Urban Rookery Presence and Effects of Rookeries on Vegetation Communities

Daniel Guerra, Texas State University

Uriel Eddy, Texas A&M University - San Antonio

Joseph Plappert, Texas Parks and Wildlife

David Smyth, Texas A&M San Antonio

Clay Green, Texas State University

Abstract: Western Cattle-Egrets (*Ardea ibis*, hereafter WECE) – although relatively recent arrivals to Texas – readily form rookeries with or without other Ardeids. Urban rookeries are cited as nuisances by local residents and officials due to unwanted noise, displeasing smell, and guano deposition within and surrounding the rookery. Urban rookeries dominated by WECE have been a source of human-wildlife conflict in the San Antonio Metro Area for nearly a decade, although there is still little understanding of the relationship between these rookeries and the vegetation community. We adapted Grassland Effectiveness Monitoring (GEM) vegetation protocols to conduct field surveys at active and historic rookeries in the San Antonio metro during the summer and fall of 2025 to determine potential attractors (habitat cues) for WECE. Additionally, we examined the immediate and lingering effects of rookery presence upon the local vegetation community. Both active and historic rookery sites contained larger woody vegetation on average than in nearby control areas; they also contained substantially less and sparser herbaceous vegetation than control areas. The presence of more substantial woody vegetation could be a significant attractor for rookery establishment, although further research is necessary to account for other factors (e.g., human presence, distance to foraging areas). The absence of herbaceous vegetation – even in historic rookeries – may be explained through eutrophication of the substrate via guano deposition. Further examination of these micronutrient spikes and lingering effects could lead to a better understanding of the effects of urban rookeries on mixed-use spaces over time.

9:45 AM CMT Patterns in Migratory and Wintering Behavior of Three Texas Colonial Waterbird Species

Presley Griffin, Texas A&M University - College Station

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

Bart Ballard, Texas A&M University - Kingsville

Jordan Giese, Caesar Kleberg Wildlife Research Institute

Abstract: The Texas coast is home to over 300 islands that provide crucial nesting habitat for colonial waterbirds. However, non-breeding ecology of these species remains largely understudied. To better understand this part of their annual cycle, we identified important migratory stopover locations and described migratory and wintering movements of three colonial waterbird species. During the 2023-2025 breeding seasons, we deployed backpack-style GPS transmitters on 12 Great Egrets (*Ardea alba*), 24 Reddish Egrets (*Egretta rufescens*), and 46 Tricolored Herons (*Egretta tricolor*) from colony islands along the Texas coast. Devices recorded locations every 30 minutes throughout the annual cycle. We evaluated patterns in migratory movements, stopover use, and wintering behavior. Migratory patterns varied among species and breeding location. Birds breeding from the upper Texas coast tended to take non-stop trans-Gulf flights, whereas middle- and lower- coast breeders tended to travel along the western Gulf Coast. Heavily used stopover and wintering areas included Southern Texas, Northeastern Mexico, and Central America. All three study species relied heavily on stopover locations near Arroyo City, Texas, Tampico, Mexico, and Veracruz, Mexico. Tricolored Herons tended to use 1-2 primary stopovers during their southward migration with important locations including near Port Mansfield, TX, Tampico, Mexico, and Veracruz, Mexico. Although conservation of nesting habitat is crucial to maintain Texas' waterbird populations, our results emphasize the need for international, collaborative efforts to protect waterbird species throughout their annual cycle.

Natural Resource Management I

Salon B, February 20, 2026

Moderator: Sarah Goodman

9:00 AM **America's Best Idea, Impaired: Wild Pig Expansion and Management Across the National Park Service**

Anna Racey, Texas A&M University - College Station
John Tomecek,

Abstract: Invasive species directly oppose the mission of the National Park Service (NPS) to conserve nature and history for the enjoyment of future generations. Wild pigs (*Sus scrofa*) stand out among them by significantly impacting ecological, cultural, and historical resources, as well as visitor experience and NPS operations. Their presence is expanding in North America, both in range and abundance, with high densities in the southeastern United States, Texas, California, and Hawai'i. We aimed to understand the distribution of wild pigs across parks, identify areas where future invasions were anticipated, and how parks responded through monitoring and management efforts. We distributed a survey to natural resource park employees through their region leads and received completed responses from 45% of parks. 37 parks had wild pigs present, five uninvaded parks had adjacent populations, and seven parks anticipated invasion within the next five years. Concerningly, 33 parks were unsure about adjacent populations, and 33 were unsure whether to anticipate invasion at all. We used tests of differences to compare nominal variables such as presence, adjacent presence, anticipation of invasion, monitoring, management, and regions, to show the strength of relationships between variables. Descriptive summaries of survey responses and further data analysis using multivariate approaches provided insights into the status of this detrimental invasive species across parks and their responses to invasion. These findings set a precedent of wild pig management in protected areas and identify areas with knowledge gaps regarding adjacent populations, helping resource managers decide whether to monitor for emergent invasions.

9:15 AM Evaluation of Common Trap Types for Capturing Wild Pigs

Charles Taylor, Texas Parks & Wildlife Department

James Beasley, University of Georgia

Lauren Buxton, USDA, Animal Plant and Health Inspection Service, Wildlife Services

Abstract: Wild pigs (*Sus scrofa*) are an extremely ecologically harmful and economically costly invasive species in the United States (US). Trapping is an effective and popular strategy for wild pig population management, and although some research has investigated the productivity of specific trap designs, studies have been limited in duration, location, and trapper personnel. To further evaluate several common wild pig trap types (corral, drop, passive net), we utilized trapping data collected from professional trappers across four US states (Arkansas, Georgia, North Carolina, South Carolina) from 2021-2023. Based on trapping data from 31 trappers representing >850 capture events, we compared trap effectiveness (estimated proportion of targeted wild pigs caught per capture event), trap night effort (number of days to first catch), and the amount of bait and time used per individual take over the lifetime of each trap location across the 3 trap types and forage seasons. Trap effectiveness ranged from 88-97% between trap types. The average number of trap nights until the targeted pigs were captured ranged from 11.28-18.02 nights. Finally, the average amount of bait used per wild pig caught ranged from 12.97-21.37 kg/pig, and the average time spent per wild pig caught ranged from 1.10-1.53 hours/pig. Our findings demonstrate that when operated by wildlife professionals, multiple designs of wild pig traps can be effective at removing targeted groups of wild pigs. Further, our results offer insights regarding the performance of wild pig trap types across seasons that can be used to inform wild pig trapping programs.

9:30 AM Utilizing Camera Trap and Scat Detection Dog Data for Multi-Site Abundance Estimation

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

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

Beth Gardner, University of Washington

Landon Schofield, East Foundation

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

Abstract: Robust and accurate estimates of population density are crucial for management of endangered species. While analytical advancements such as spatially explicit capture-recapture models have generally improved our ability to estimate abundance, there is still a need to identify the most effective methods for temporal monitoring of rare species. Noninvasive methods, such as camera traps and scat detection dogs, can be valuable, low-impact tools to monitor populations. However, few studies have explicitly compared the two methods. We present a case study of active research implementing both methods to estimate site-specific density for the last two populations of endangered ocelots (*Leopardus pardalis*) remaining in the United States. Our objectives were to (1) compare the implementation of both camera and scat dog approaches by assessing the collected data, costs, and time investment, and (2) develop the first multi-site abundance estimate for the two U.S. ocelot populations. We estimated density using two years of photo monitoring across 466 remote cameras and found a strong association with vegetation structure. We compared these spatial density estimates to the location and species of 58 scat across the landscape. Operation of the camera grid was more expensive and time-consuming than scat detection dogs, but resulted in more ocelot detections. Using scat detection dogs in this semi-arid system also presented unique logistical challenges compared to both traditional approaches and other scat dog surveys. Further assessment of the efficacy of these methods in a cost-benefit framework will inform best practices for species monitoring and help optimize future conservation efforts.

9:45 AM Mule Deer in the Trans-Pecos: Using Satellite Technology for Habitat Monitoring

Kevin LeGrow, Texas Parks & Wildlife Department

Justin French, Borderlands Research Institute - Sul Ross State University

Carlos Gonzalez, Borderlands Research Institute - Sul Ross State University

Shawn Gray, Texas Parks & Wildlife Department

Abstract: Mule deer (*Odocoileus hemionus*) are a species of management concern in Texas because of their economic importance, and declining populations. While many factors may contribute to population declines, brush encroachment degrades mule deer habitat quality throughout their range. We will study the influences of brush encroachment on habitat selection within a population of mule deer in the Trans-Pecos eco-region of Texas and the consequences of that selection for individual survival. From 2015 to 2023, 96 mule deer at Black Gap Wildlife Management Area (BGWMA) were fitted with GPS collars. We will be using Integrated Step Selection Analysis (iSSA) as the framework to analyze the GPS data and add in brush density as one of the environmental covariates. To estimate brush density, we will use a novel approach combining field vegetation data, rasters of the modified soil adjusted vegetation index (MSAVI), and Functional Principal Component Analysis (fPCA) to relate vegetation dynamics to brush canopy cover. We hypothesize that the variation in vegetation phenology will show a pattern that will allow us to determine the difference between woody and herbaceous vegetation and ultimately be used to estimate brush canopy cover at a landscape scale. We found that patterns of vegetation phenology are indicative of the degree of brush canopy cover ($\beta = 1.53$, $SE = 0.83$, $p = 0.076$). However, we require additional sampling to achieve sufficient precision to predict over landscape scales. This framework could then be used to monitor mule deer habitat quality via satellite, facilitating mule deer habitat improvements.

Urban Wildlife

Ivy 1 & 2, February 20, 2026

Moderator: Jessica Alderson

9:00 AM Bird City Texas: Campus Edition

Natasia Moore, Texas Parks and Wildlife Department

Abstract: Launched in 2018, Bird City Texas is a community-focused certification program designed to support bird conservation where Texans live, work, and play. The program's science-based criteria address key threats to birds, such as habitat loss and window collisions, while promoting actions that are both impactful and achievable. Research shows that bird-friendly habitats not only support declining bird populations but also increase property values, reduce pest insects, and boost local economies through nature tourism. From urban centers to rural towns, every community has the potential to provide meaningful habitat for birds - and in doing so, improve the quality of life for people. To date, 15 communities across Texas have earned Bird City certification by demonstrating their commitment to habitat enhancement, community engagement, and bird-friendly practices. In 2026, Bird City Texas sought to expand its reach by introducing campus-specific criteria, recognizing the unique role that colleges and universities can play in bird conservation. These institutions often manage large areas of green space that can serve as both critical habitat and sources of risk for birds. By participating in the program, campuses can mitigate threats, engage students and staff, and join a growing network of certified Bird Cities. This presentation will highlight current bird population trends, the ecological and social benefits of urban bird conservation, an overview of the Bird City Texas application process, and details about the new campus-focused criteria.

9:15 AM Wildlife Survey on Houston's Urban Land Bridge Reveals Temporal Partitioning Among Mesopredators

Michael Lacampo, University of Houston
Ann Cheek, University of Houston
Courtney Hall, Memorial Park Conservancy

Abstract: Roads block animal movement, increasing local extinction risk and reducing biodiversity. Wildlife crossing structures mitigate these effects, yet their effectiveness in urban environments remains underexplored. We conducted a camera-trap survey at the Kinder Land Bridge in Memorial Park, Houston, TX, across three periods (10 January–7 May 2024). We monitored two land bridges, one culvert, and adjacent prairie and tree line habitats to characterize wildlife use across structures, habitats, diel periods, and seasons under heavy human activity. Crossing structures were used by people, domestic animals, and several native mammals, with carnivores favoring the land bridges and small mammals the culvert, indicating structure-specific preferences. In winter, coyotes (*Canis latrans*) were strictly nocturnal while free-roaming domestic cats (*Felis catus*) were diurnal, but by spring coyotes were absent and cats shifted to both day and night use. These patterns diverge significantly from activity elsewhere in Greater Houston, where both coyotes and domestic cats are predominantly nocturnal, showing that species can alter behavior to use land bridges without conflict. Several mammals were detected in adjacent tree line and prairie habitats but not on the crossings, highlighting under-representation of small herbivorous and omnivorous mammals on the structures. This pattern points to a management target, as adjustments to vegetation and cover could encourage use by species currently absent. These results represent the first systematic survey of the land bridge and surrounding prairie restoration area, providing a baseline for usage and highlighting the potential for multi-functional urban infrastructure to support wildlife in areas of high human activity.

9:30 AM **Why Did the Cat Cross the Road? Exploring the Genomic Link Underlying Decision-Making Behavior in Wild Cats**

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

John Young, Texas Department of Transportation

Emma Brookover, Caesar Kleberg Wildlife Research Institute

Brian Davis, Texas A&M University - College Station

Jan Janečka, Duquesne University

Lucas Spetic da Selva, Texas A&M University - College Station

Michael Tewes, Texas A&M University - Kingsville

Abstract: Roads serve as critical infrastructures of the global economy, but they raise concerns about habitat fragmentation. Wildlife will modify their behavior in response to road-related threats by exhibiting altered movements. In South Texas, the bobcat (*Lynx rufus*) and the federally endangered ocelot (*Leopardus pardalis*) are prime roadkill candidates, vulnerable to ecological and genomic difficulties exacerbated by roads. Despite progress towards identifying wildlife hotspots, limited genomic research exists to understand felid decision-making around roads. In this study, bobcats and ocelots were captured at Laguna Atascosa National Wildlife Refuge and private ranches in South Texas. Blood samples were collected, and cats were fitted with GPS or VHF collars to assess movement patterns. Genomic DNA from nearly 450 blood samples was extracted, and whole genome sequences were developed. Single nucleotide variants (SNVs) were called for individual cats and jointly across all cats. SNVs were called in ten genes hypothesized a priori to influence decision-making. A gene ontology (GO)-esque functional categorization of the bobcat genome was performed to select candidate genes, and genomic variation was analyzed for all individuals across traits relating to road crossing probability. We will use population relatedness to assign “genomic IDs” and construct pedigrees to ultimately determine roadkill individuals’ origin. The kinship analyses will identify inherently high-risk individuals and quantify the ‘heredity of roadkill vulnerability.’ These genomic dynamics will illuminate the functional adaptability shaping these wild cats’ persistence in an expanding urban environment. By coupling behavioral ecology with functional genomics, we can inform ocelot conservation decision-making to reduce roadkill mortality.

9:45 AM **Spatial Distribution of Urban Coyotes is Influenced by Prey Abundance and Forest Cover**

Ann Cheek, University of Houston

Courtney Hall, Memorial Park Conservancy

Michael Iacampo, University of Houston

Mailin Castro, University of Houston

Valentina Urdaneta-Hernandez, University of Houston

Jackson Berg, University of Houston

Julia Cabello, University of Houston

Julia Samuel, University of Houston

Abigail Rothschild, Feinberg School of Medicine, University of Houston

Mariah Velez, University of Houston

Carolina Rodriguez, University of Houston

Quynh Le, University of Houston

Dino Rodriguez, uni

Alora Robinson, University of Houston

Tyler Sattaur, University of Houston

Abstract: Coyotes (*Canis latrans*) are the most common large predator in many urban areas of central and eastern North America. Anecdotal reports indicate that coyotes are distributed throughout the Houston, TX metropolitan area. This study explores how human activity, surrounding landcover, prey availability, and season affect where coyotes visit most often. Camera traps were set up in parks, cemeteries, golf courses, and natural areas along two transects stretching from central Houston to the southeast and to the northeast. Over a four year period, cameras operated in Jan, Apr, Jul, and Oct each year at 38 sites, a total of 16,211 camera-days. All mammal photos were identified to species. Landcover was characterized according to National Landcover Database categories and quantified using Google Earth Pro. A general linear model was used to analyze the effect of habitat characteristics, prey availability, human activity, season, and year on coyote detection frequency. Three factors were positively correlated with how often coyotes were detected in a greenspace: rabbit detection frequency, amount of forest in the surrounding area, and amount of developed land in the surrounding area. Human activity at a site, whether on foot or in a vehicle had no effect. Season had no effect, nor did year. Green spaces with more available prey and forest cover provide coyote habitat, especially in areas surrounded by developed land. Knowing where and when coyotes are found most frequently is important for understanding how coyotes adjust habitat use and behavior to thrive in urban environments.

Conservation & Ecology of Mammals IV

Salon F & G, February 20, 2026

Moderator: Ashlyn Halseth-Ellis

10:15 AM Genetic Status and Connectivity of Transboundary Region Mountain Lion Populations

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

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

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

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

Matthew Smith, NA

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

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

Clayton Hilton, Texas A&M University-Kingsville

Dana Karelus, Texas Parks & Wildlife Department

Grant Harris, U.S. Fish and Wildlife Service

Michael Cherry, Caesar Kleberg Wildlife Research Institution

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

Abstract: Landscape-scale connectivity, facilitated by dispersal and gene flow, is essential for sustainable wildlife populations. A loss of connectivity can reduce population sizes and genetic diversity, increasing extirpation risk. Anthropogenic barriers, like the 331-kilometer nine-meter-tall fence along Texas' southern border, can impact transboundary movements of multiple species, including the mountain lion (*Puma concolor*). Continued construction of the border barrier system has presented new obstacles to movement, prompting a need to reassess the genetic status of mountain lion populations in this transboundary system. Previous research identified two breeding populations, in South and West Texas. The South Texas population was more isolated and less genetically diverse than adjacent populations in West Texas and New Mexico. We used microsatellite markers at 10 loci to identify 33 individual genotypes from biological samples collected between 2022-2025 (South Texas n=12, West Texas n=4, New Mexico n=17) and compared them to 109 genotypes from 1985-2011 (South Texas n=28, West Texas n=50, New Mexico n=31). We found support for genetic clusters representing West Texas and New Mexico from both 2022-2025 and 1985-2011 sample groups. The previous unique South Texas genetic cluster is no longer represented in present-day samples, which displayed higher levels of admixture with West Texas mountain lions and less genetic differentiation from West Texas and New Mexico. Additionally, genetic diversity in the South Texas population increased ($\Delta A_r = 0.42$). Our preliminary results suggest increased connectivity and genetic

exchange between transboundary populations, which may reduce potential negative demographic and genetic impacts posed by the border barrier system.

10:30 AM **Unfriended and Reconnected: Social Integration and Seasonal Shifts In Group Dynamics of Translocated Desert Bighorn Sheep**

Dylan Stewart, Texas A&M University - College Station

E. Alejandro Lozano-Cavazos, Universidad Autónoma Agraria Antonio Narro

Stephen Webb, Texas A&M Natural Resources Institute

Abstract: Restocking efforts are commonly employed to augment populations of bighorn sheep (*Ovis canadensis*), but success often is contingent upon the social integration of translocated individuals with resident conspecifics. To investigate the group dynamics of restocked desert bighorn sheep (*O. c. mexicana*), we fitted 16 individuals (9 F, 7 M) with GPS collars programmed to collect one location every 3 hours (8 locations per day) from 2022 to 2023. We constructed daily association matrices, implemented changepoint analyses to detect seasonal shifts, and used generalized linear mixed models to examine the influence of seasonal periods and dyad association types (i.e., female–female, male–male, or female–male) on group dynamics, including the probability of pairwise contact, number of association bouts, and bout duration. We detected 6 seasonal shifts in group dynamics, broadly explained by social bonding, forage availability, resource dependency, and mating activity. The interconnectedness of individuals peaked during the acclimation period and during periods of water dependency and mating activity. While pairwise contacts were frequent, bout durations were typically short, consistent with a species exhibiting dynamic subgrouping and frequent fusion–fission events. Our results suggest that restocked desert bighorn sheep began integrating with resident conspecifics relatively quickly, likely facilitated by the high density of the resident population. These findings of rapid integration in a high-density population complement prior studies conducted in low-density populations. Future research should examine group dynamics in both resident and restocked populations across a range of population densities to better understand how density shapes social integration.

10:45 AM **Not All Who Wander Are Lost: Unraveling Movement and Settlement Behavior of Translocated Rocky Mountain Bighorn Sheep**

Autumn Patterson, Texas A&M University - College Station

Dylan Stewart, Texas A&M University - College Station

Chad Lehman, South Dakota Game, Fish, and Parks

Teresa Frink, Chadron State College

Jon Jenks, South Dakota State University

John Kanta, South Dakota Game and Fish Department

Ty Werdel, Texas A&M University - College Station

Abstract: Translocation is a common conservation strategy for restoring extirpated populations; however, post-release movement behavior can strongly influence success. Audubon's bighorn sheep (badlands bighorn; *Ovis canadensis auduboni*) historically inhabited the Black Hills of South Dakota but were extirpated in the early 1900s due to anthropogenic activities such as unregulated hunting. From February 2015 to January 2017, 26 bighorn sheep (24 female; 2 male) were translocated from the Luscar Mine in Alberta, Canada, to the northern Black Hills, in South Dakota. Using GPS ($n = 22$) and VHF ($n = 2$) collar data, we analyzed post-release movement patterns and net displacement with the "move" package in R to identify exploratory periods, detect when movement stabilized, and quantify individual settlement times. Sheep initially exhibited high movement; mean daily movement declined from 2,326 m/day pre-settlement to 1,643 m/day post-settlement, while net displacement increased from 1.7 km/day to 3.4 km/day. These observations suggest exploratory behavior followed by site fidelity, post acclimation. Despite movement stabilization, herd survival was low ($n = 30.7\%$), likely due to disease and anthropogenic pressures such as habitat loss and vehicle collisions. Understanding how bighorn sheep interact with altered landscapes can inform adaptive management and enhance future translocation success.

11:00 AM **Habitat Use and Movement of Collared Peccaries Associated with the Barrier Along the International Border**

Emily Masterton, Texas A&M University - College Station
Edward Tomassetti, Texas A&M University - College Station
Daniel Benson, Texas A&M University - College Station
Abigail Dwelle, Texas A&M University - College Station
Walter Cook, Texas A&M University - College Station
Jacob Dykes, Mississippi State University
Whitney Gann, Texas Parks & Wildlife Department
Stephen Webb, Texas A&M Natural Resources Institute
Marcus Blum, Texas A&M University - College Station

Abstract: Landscape-scale infrastructure, such as fences, walls, and highways, can impede wildlife movement and reduce connectivity, potentially resulting in genetic isolation. The approximately 3,200-km United States-Mexico International border barrier has raised concern for species reliant on landscape connectivity. Previous studies have documented impacts of the barrier on apex predators such as jaguars (*Panthera onca*) and on endangered species like ocelots (*Leopardus pardalis*), but its effects on ungulates remain poorly understood. We investigated how the barrier along the international border influences movement patterns and habitat selection in collared peccaries (*Pecari tajacu*). Eighteen individuals were fitted with GPS collars across six U.S. Fish and Wildlife Service tracts adjacent to the barrier. Using the GPS collar data, we applied resource selection functions and hidden Markov models to quantify habitat selection, movement behavior, and resulting patterns of functional connectivity relative to the border barrier. Results indicated that collared peccaries regularly used these crossings, selected dense vegetative cover throughout their range, and occasionally exploited agricultural and edge habitats. Movement and habitat use patterns highlight the behavioral adaptability of collared peccaries, suggesting that while the border barrier system diverts movement, existing crossings, structural gaps, and surrounding habitat features help maintain connectivity. These findings suggest that collared peccaries may retain some connectivity across fragmented landscapes when appropriate crossing opportunities are present. Conservation measures aimed at expanding wildlife crossings and restoring adjacent habitats could improve landscape permeability and mitigate potential effects of the border barrier on movement and habitat connectivity.

11:15 AM Using Helicopter Surveys to Assess Habitat Use of Collared Peccary in Southern Texas

Abigail Dwelle, Texas A&M University - College Station
Stephen Webb, Texas A&M Natural Resources Institute
Daniel Benson, Texas A&M University - College Station
Emily Masterton, Texas A&M University - College Station
Edward Tomassetti, Texas A&M University - College Station
Marcus Blum, Texas A&M University - College Station
Walter Cook, Texas A&M University - College Station
Jacob Dykes, Mississippi State University
Paul Lukacs, University of Montana
Whitney Gann, Texas Parks & Wildlife Department

Abstract: Studying wildlife across large, heterogeneous landscapes presents logistical challenges because ground-based surveys are limited in scale. In southern Texas, helicopter surveys provide broad coverage and are routinely used to monitor large mammals, including collared peccary (*Pecari tajacu*). However, relatively little is known about peccary population dynamics and habitat use in Texas. Our objective was to develop species distribution models (SDMs) using resource utilization functions (RUFs) and presence-only data derived from helicopter surveys. From 2016 to 2025, 54 surveys were flown along systematic transects across 10 sites, totaling 129,000 ha, yielding 1,312 peccary observations (n = 6,702 individuals). Kernel density estimation created hotspot maps of intense use, which were integrated with vegetation data (Rangeland Analysis Platform, 30 m resolution) in a geographic information system to assess species-habitat relationships. Preliminary analyses indicated a positive relationship between woody cover and peccary occurrence. Because woody cover can reduce detection from aerial surveys, a correction factor is being developed to adjust for detectability, but preliminary analyses indicate that detection probability decreased with increasing distance from the helicopter and was further reduced by woody vegetation cover. Future habitat selection models will adjust for detection probability and use Type I resource selection analyses. Additional covariates, including riparian soils and wild pig (*Sus scrofa*) presence, will be modeled to understand what factors drive peccary distribution at the landscape scale. These spatial models will support habitat suitability assessment and guide management strategies for collared peccary in southern Texas.

11:30 AM **Fifty Years in the Making: Revisiting Collared Peccary Demographics in Southern Texas**

Edward Tomassetti, Texas A&M University - College Station

Daniel Benson, Texas A&M University - College Station

Abigail Dwelle, Texas A&M University - College Station

Emily Masterton, Texas A&M University - College Station

Marcus Blum, Texas A&M University - College Station

Walter Cook, Texas A&M University - College Station

Jacob Dykes, Mississippi State University

Paul Lukacs, University of Montana

Ehsan Moqanaki, University of Montana

Whitney Gann, Texas Parks & Wildlife Department

Stephen Webb, Texas A&M Natural Resources Institute

Abstract: Long-term harvest records provide rare opportunities to evaluate demographic changes in wildlife populations over time. These data are especially valuable for a historically understudied species such as the collared peccary (*Pecari tajacu*). We analyzed >50 years of harvest records (1971–2024; n = 4,426) from the Chaparral Wildlife Management Area to quantify demographic, morphometric, and reproductive characteristics of the population. Sex ratios from 1994–2024 remained consistently male-biased (n = 3,034; M = 55.8%, F = 44.2%), a pattern similar to previous records from 1974–1993 (53.3% male). Decade-specific summaries showed this bias remained stable across 1994–2003 (54.2% male), 2004–2013 (56.9% male), and 2014–2023 (55.1% male), indicating males were harvested proportionally to their prevalence in the population. Male body mass appeared lower during 2014–2023 (31.7 ± 4.97 kg) compared to 1994–2003 (33.3 ± 7.10 kg) and 2004–2013 (33.6 ± 5.52 kg). Female body mass followed a similar pattern, averaging 32.3 ± 6.69 kg (1994–2003), 32.7 ± 5.83 kg (2004–2013), and 29.5 ± 5.68 kg (2014–2023). Ongoing research will integrate age structure, reproductive metrics, precipitation, and vegetation productivity to improve our understanding of the demographic patterns seen in the harvest records. These analyses will clarify the environmental and management factors responsible for long-term demographic shifts in southern Texas peccary populations.

11:45 AM **Life in the Pasture: Establishing Baseline Behavior for Giraffes in a Multi-Species Setting**

Grace Soechting, Tarleton State University

Adam Eyres, Fossil

Luke Linhoff, Tarleton State University

Molly Shea, Fossil Rim Wildlife Center

Heather Mathewson, Tarleton State University

Abstract: Effective welfare management relies on species-typical norms to distinguish between healthy activity and stress-related deviations. In the wild, giraffes browse intermittently for over half of their day, whereas captive individuals can develop stereotypic behaviors due to limited foraging opportunities and concentrated feeding schedules. To address these welfare challenges, managers must first quantify current activity levels to identify specific deficits and measure the success of future husbandry interventions. We addressed this need by establishing a baseline activity budget for adult giraffes, creating the necessary reference point for evaluating husbandry practices. We conducted this study at Fossil Rim Wildlife Center in Glen Rose, Texas, which maintains 13 generic giraffes (*Giraffa* sp.) within 107-ha multi-species pasture. From this population, we collected behavioral data on 7 adults through direct focal observations using the ZooMonitor Software platform from May 2025 through November 2025, following preliminary practice sessions. Using R software, we will perform statistical analyses to quantify time spent feeding and foraging and to assess overall time allocation across all behavioral categories. This study evaluates giraffe behavior in a multi-species environment to offer insights into common behavioral patterns in managed care. While results remain ongoing, we expect these findings to provide the quantitative context managers need to better evaluate and support the giraffes in their care.

Conservation & Ecology of Birds IV

Vine 1 & 2, February 20, 2025

Moderator: Krysta Demere

10:15 AM The Effect of Annual and Seasonal Rainfall on Riparian Bird Communities in the Southern United States

Gabriel Andrade Ponce, Stephen F. Austin State University

Alejandra Martinez, Stephen F. Austin State University

Selma Glasscock, Welder Wildlife Foundation

Christopher Schalk, USDA Forest Service

Reuber Antoniazzi, Stephen F. Austin State University

Jessica Glasscock, Stephen F. Austin State University

Abstract: Variability in rainfall patterns can impact bird communities by altering food availability, habitat structure, and intensifying physiological stress. However, carryover effects of rainfall across seasons and years remain a key knowledge gap across different bird communities or species. We investigated the interannual and intra-annual effects of spring and summer rainfall on bird abundance and diversity in the mid-coastal region of Texas. Using Bayesian multi-species generalized linear models and Hill diversity indices, we assessed whether the bird responses to rainfall were immediate or delayed. Overall, diversity metrics were not associated with rainfall; however, species-specific responses revealed distinct patterns. Migratory and insectivorous species, such as flycatchers and vireos, showed positive associations with sampling-year summer rainfall, likely reflecting increased arthropod availability. In contrast, the Painted Bunting showed a negative association with spring rainfall, possibly due to increased resource availability in surrounding open grasslands that reduced the species' use of riparian habitats. Resident species showed heterogeneous patterns: Olive Sparrow capture frequency was positively associated with previous-year rainfall, whereas Northern Cardinal and Black-crested Titmouse responded positively to summer and spring rainfall during the sampling year, respectively. Our findings underscore the species- and season-specific nature of rainfall effects and highlight the importance of considering life history and functional traits (e.g., migratory status, diet) when assessing bird responses to changing precipitation regimes.

10:30 AM **Applications of Network Ecology to Cackling Geese (*Branta Hutchinsii*)
Wintering in the Southern Great Plains**

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

Javier Segovia, Texas A&M University of Kingsville

Kevin Kraai, Texas Parks & Wildlife Department

Daniel Collins, Borderlands Research Institute - Sul Ross State University

Jay VonBank, U.S. Geological Survey

Jordan Giese, Caesar Kleberg Wildlife Research Institute

Bart Ballard, Texas A&M University - Kingsville

Abstract: Migratory species make impressive movements between breeding and nonbreeding areas, but the capability to track species throughout the annual cycle at fine spatiotemporal scales is the result of recent technological innovations. Advances in animal tracking allow for more accurate tracking of migratory species, more frequent datapoint collection, and over longer periods of time. This can reveal aspects of the annual cycle in greater detail than previously possible. Cackling Geese (*Branta hutchinsii*) migrate thousands of miles annually between breeding, molting, and wintering sites. In their seasonal movements between wintering and breeding localities, numerous stopover sites are used to rest and refuel. The importance of stopover sites to migratory birds like Cackling Geese cannot be overstated, yet there is a significant lack of knowledge to inform management on where the key stopover areas are for most species, making conservation efforts less impactful. In the winters of 2022-2025, we deployed 301 GPS-GSM transmitters on female Cackling Geese wintering in the southern Great Plains. We aim to quantify fine-scale movement patterns and identify areas of conservation importance throughout the annual cycle. We have applied network analysis and graph theory to create a network model for midcontinent Cackling Geese. We hope that results from this project will provide important information to help guide managers on where to invest in conservation efforts.

10:45 AM **Hunting Influences Waterfowl Activity in Texas Wetlands**

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

Rachel Fern, Texas Parks & Wildlife Department

Bart Ballard, Texas A&M University - Kingsville

Jordan Giese, Caesar Kleberg Wildlife Research Institute

Abstract: Waterfowl sanctuaries (i.e., non-hunted wetlands) are important for waterfowl during the hunting season and have been shown to increase local abundance and diversity. The Texas Coast Waterfowl Sanctuary Program, created by Texas Parks and Wildlife Department, aims to enroll private wetland sites to serve as waterfowl sanctuaries in areas with high hunting pressure. Understanding how waterfowl respond to hunting on the Texas coast can help inform implementation of future sanctuaries. Traditional waterfowl survey techniques provide incomplete coverage across the diel cycle and introduce potential biases and disturbances to birds. Autonomous recording units (ARUs) have become increasingly common in avian research but to date, applications for surveying waterfowl have been limited. Our objective was to examine the effect of hunting pressure on waterfowl activity in Texas Mid-coast wetlands using ARUs. We deployed ARUs on pairs of sanctuary and hunted wetlands along the Texas coast during winters '23 and '24. We used BirdNET, a machine learning classifier, to detect vocalizations of nine species of ducks and geese, and used detections per survey day as a measure of vocal activity. Several species showed significantly higher activity at sanctuaries compared to hunted sites; these included green-winged teal, northern pintail, and Ross's goose/snow goose. American wigeon, gadwall, and greater white-fronted goose also showed higher activity at sanctuaries, although these estimates had more uncertainty. Our study demonstrates the effectiveness of sanctuaries as waterfowl habitat in the Texas Mid-coast region.

11:00 AM Habitat Loss Results in Island-Level but not Population-Level Declines in Waterbird Nest Abundance Over 16 Years (2006-2021) on the Lower Coast of Texas

David Essian, Harte Research Institute, Texas A&M University Corpus Christi

Liam Wolff, Harte Research Institute, Texas A&M University Corpus Christi

Jessica Magolan, Harte Research Institute, Texas A&M University Corpus Christi

James Gibeaut, Harte Research Institute, Texas A&M University Corpus Christi

David Newstead, Coastal Bend Bays & Estuaries Program

Dale Gawlik, Harte Research Institute, Texas A&M University Corpus Christi

Abstract: Coastal islands in Texas are losing land to erosion, subsidence, and sea-level rise, resulting in the rapid loss of colonial waterbird nesting habitat. In response, resource managers are investing millions of dollars annually in island rehabilitation. However, they are doing so with little information on the numerical responses of nesting waterbirds to habitat changes. Therefore, we developed hierarchical Bayesian models to assess the effect of habitat loss on the relative abundance of two ground-nesting and three tree-nesting waterbird species. Our data included breeding pair counts from 2006 to 2021 at 183 islands, and estimates of land area from 1995, 2008, 2012, and 2018 at 213 islands. The number of tree-nesting pairs tended to decline faster at smaller islands with greater rates of habitat loss. The number of black skimmer and reddish egret pairs tended to decline on islands in Corpus Christi Bay but increased in Lower Laguna Madre, a pattern that could make their populations more vulnerable to localized disturbance events (e.g., tropical storms in Lower Laguna Madre). Despite widespread habitat loss, the population index derived from our models revealed little evidence of decline in relative waterbird abundance. Our results hint at robust metapopulation dynamics, such that positive trends at some islands buffered negative trends at others, at least for current levels of island loss. Nonetheless, if island loss continues at the predicted rate, colonies will be fewer, smaller and farther apart, almost certainly decreasing the metapopulation carrying capacity of waterbirds in Texas.

11:15 AM **Spatiotemporal Drivers of Energy Expenditure During the Nest Cycles of Three Colonial Waterbird Species**

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

Bart Ballard, Texas A&M University - Kingsville

David Essian, Harte Research Institute, Texas A&M University Corpus Christi

Dale Gawlik, Harte Research Institute, Texas A&M University Corpus Christi

Jordan Giese, Caesar Kleberg Wildlife Research Institute

Abstract: In colonial waterbirds, foraging habitat availability has been identified as a key factor in prioritizing colony islands for rehabilitation. However, the energetic costs of foraging during the breeding period may be an important constraint on reproduction, especially during nestling provisioning. Therefore, we aim to link foraging energy expenditure to nest stage and attendance, and assess potential variation among islands and bay systems for three wading bird species. Adult tricolored herons (*Egretta tricolor*, n = 46), reddish egrets (*Egretta rufescens*, n = 23), and great egrets (*Ardea alba*, n = 12) were captured on colony islands along the Texas coast during early nesting (April through July) 2023 – 2025, fit with GPS – GSM transmitters and onboard triaxial accelerometers, and tracked throughout the breeding season. We calculated daily overall dynamic body acceleration (ODBA, a proxy for movement-based energy expenditure) throughout the breeding season (approximately March – August) from the accelerometer data. For individuals with known nest locations, nest attendance and ODBA were variable within and among species, and ODBA appeared to increase throughout the nest period. We will use behavioral classification models to estimate energy expenditure during foraging bouts and nest attendance, separately. Using these data, we can integrate estimates of energy expenditure into models of foraging habitat selection, nest survival, fledging rates. Investigating spatial and temporal drivers of energy expenditure related to habitat selection in colonial waterbirds may aid managers in prioritizing colony islands for rehabilitation, particularly if they account for variation in population demographic rates.

11:30 AM Foraging Behavior and Habitat Selection of Breeding Colonial Waterbirds on the Texas Coast

Jordan Giese, Caesar Kleberg Wildlife Research Institute

Abstract: The Texas coast is home to >300 islands that provide crucial nesting habitat for colonial waterbirds. Due to erosion from sea level rise, storm surges, and shipping traffic, there is a growing need to develop a data-driven tool to prioritize island restoration projects where the potential for enhancing waterbird populations is high. Identification of high-priority areas requires examination of foraging habitat availability adjacent to colony islands. Our objective was to describe breeding season space use and habitat selection of three colonial waterbird species nesting along the Texas coast. We captured and placed GPS backpacks on Great Egrets (*Ardea alba*), Reddish Egrets (*Egretta rufescens*), and Tricolored Herons (*Egretta Tricolor*) during the spring, 2023-2025. For each individual, we calculated home range size and distance between colony and core foraging area. We built integrated step-selection functions to evaluate environmental predictors of habitat selection. Foraging range sizes and foraging distances varied significantly across Texas' six bay systems, with individuals of southern colonies having larger core foraging areas and traveling shorter distances between colonies and foraging areas. Great Egrets and Tricolored Herons traveled greater distances to foraging areas than Reddish Egrets and selected estuarine and palustrine emergent wetlands. Reddish Egrets foraged closer to colonies and selected open tidal flats and shorelines within bays. Colony island restoration decisions will likely occur within bay systems as dredge material becomes locally available. Our findings will contribute to a prioritization tool that identifies restoration areas within bays that will most benefit colonial waterbird populations.

11:45 AM Rookery of Dreams: Consensus Building and Stakeholder Engagement in Pursuit of Sustainable Solutions to Human-Egret Conflict

Joseph Plappert, Texas Parks and Wildlife

Daniel Guerra, Texas State University

Uriel Eddy, Texas A&M University - San Antonio

David Smyth, Texas A&M San Antonio

Clay Green, Texas State University

Abstract: Western Cattle-Egrets (*Ardea ibis*, hereafter WECE) – although relatively recent arrivals to Texas – readily form rookeries with or without other Ardeids. Urban rookeries are often cited as nuisances by local residents and create management challenges for officials due to unwanted noise, foul odors, and guano deposition. Urban rookeries dominated by WECE have been a source of human-wildlife conflict in the San Antonio Metro Area for nearly a decade. However, there is still little understanding of what habitat characteristics are associated with rookery establishment. Additionally, little is known about the short-term and long-term effects rookeries have on the local vegetation and soil/water quality. To better understand these relationships and improve technical guidance, we engaged with 15 different stakeholder organizations at local, state, and federal levels. Ensuring that every stakeholder has a voice within the research and management of these urban rookeries presents interesting challenges in consensus building, networking, and conflict resolution. Without the consensus of all relevant stakeholders, we would not have the funding, resources, access, or political will necessary to pursue answers to these pressing questions. Through this collaboration we will seek to create a habitat suitability model capable of predicting where WECE may attempt to establish rookery sites within the San Antonio Metro Area, and a “human tolerance model” to identify areas where rookery presence would be minimally disruptive to humans. These models will be combined to identify potential locations for a case study in promoting rookery establishment via decoy egrets, rookery sounds and artificial nesting structures.

Natural Resource Management II

Salon B, February 20, 2026

Moderator: Derrick Wolter

10:15 AM Cervid Population Trends and Foraging Behavior to Guide Forest Management Strategies Across the Continental United States

Christopher Schalk, USDA Forest Service

Daniel Herrera, North Carolina Museum of Natural Sciences

Michael Cove, North Carolina Museum of Natural Sciences

Abstract: Overabundant cervids can exhibit substantial browsing pressure, limiting the ability of forests to regenerate. This relationship is well-known at local scales and has assisted in at district or forest-level management decisions. However, an analysis of cervid browsing pressure across larger spatial scales might further assist managers by identifying locations which would benefit from additional targeted management. Within this analysis, we used observations of white-tailed deer, mule deer, elk, and moose from Snapshot USA, a coordinated camera-trap survey of the United States, to estimate the cumulative browsing pressure experienced in forest ecosystems across the continental United States. Our model contains two components: an n-mixture model to estimate the number of cervids present on the landscape, and a beta regression model to estimate the proportion of time cervids spend browsing and feeding. We hypothesized that factors contributing to habitat quality would have a positive relationship with cervid abundance, but a negative relationship with time spent browsing since abundant resources should reduce time spent searching for food. However, we also hypothesized that cervid abundance would have a positive relationship with the time spent browsing since conspecifics promote competition. Finally, we hypothesized that predation pressure would reduce both the abundance and time spent foraging. From these results, we gained a greater understanding of cervid-forest dynamics and can better predict where browsing pressure is greatest on the landscape, enabling targeted intervention strategies.

10:30 AM **Weather Whiplash Reshapes Soil Microbial Communities in Edwards Plateau**

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

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

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

Sanku Dattamudi, Department of Agriculture, Agribusiness, and Environmental Sciences, Texas A&M University-Kingsville

Abstract: Rapid transitions from prolonged drought to extreme rainfall, or weather whiplash, can reorganize ecosystem processes and functions. Soil microbial communities drive carbon and nutrient cycling, regulate soil structure and fertility, and are especially responsive to extreme climate events, making them robust indicators of ecosystem changes. We leveraged an acute extreme rainfall and subsequent flooding event (July 4 – 7, 2025) in the Edwards Plateau Ecological Region of Texas, USA, to assess soil microbial community changes from weather whiplash. To capture soil microbial responses, we collected 22 paired soil samples on a private ranch in Kerr County pre-flood (June 16 – 18, 2025) and again two weeks after the flood event (July 24, 2025). We used phospholipid fatty acids (PLFA) profiles to serve as indicators of changes in soil microbial community composition and evaluated shifts in composition metrics relative to the flood event. Multivariate analysis of PLFA profiles showed a significant ($p = 0.003$) shift in community composition between pre- and post-flood. Total living microbial biomass increased 25% (3,457 ng/g; $\pm 1,048$ ng/g) following the flood, likely reflecting short-term shifts toward taxa that tolerate or benefit from anaerobic conditions. Our findings demonstrate that weather whiplash can trigger pronounced shifts in soil microbial communities that remain evident at least two weeks post-flood, underscoring the importance of tracking post-disturbance dynamics through time. Incorporating finer, extended temporal sampling of community and functional responses will be essential for understanding how weather whiplash events reshape soil processes and overall ecosystem resilience.

10:45 AM Identifying Scalable Algorithms for Measuring Brush Impacts on Pronghorn Habitat at Ecoregion Scales

Halli Lovell, Borderlands Research Institute - Sul Ross State University

Justin French, Borderlands Research Institute - Sul Ross State University

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

Shawn Gray, Texas Parks & Wildlife Department

Carlos Gonzalez, Borderlands Research Institute - Sul Ross State University

Abstract: Brush encroachment degrades North American rangelands, severely impacting habitat quality for numerous wildlife populations. Managers frequently attribute pronghorn (*Antilocapra americana*) decline in the Trans-Pecos region to brush encroachment, but there is no objective assessment of the degree or spatial distribution of these impacts. Recent advances in Landsat satellite technology now allow for the detection of regional-scale changes in vegetation abundance and distribution, offering capabilities not addressed in existing frameworks and considerable gains in computational efficiency. This study aims to evaluate the accuracy and precision of leveraging vegetation phenology information, rather than instantaneous spectral information, to predict brush canopy cover at landscape scales, and assess brush impacts to pronghorn habitat. Specifically, we predict pixels with slower rates of vegetation change and reduced range of vegetation productivity will contain more extensive brush cover. We used functional PCA and zero-inflated gamma models to evaluate these predictions. We found our hypothesis held for predicting the presence of brush ($\exp(b) = 1.62$, $SE = 2.86$, $p = 0.004$), but other aspects of phenology predicted the degree of canopy cover ($\exp(b) = 7.28$, $SE = 1.07$, $p = 0.005$), given brush was present. By incorporating landscape-wide predictions into models of pronghorn habitat selection, we will estimate the effect of brush canopy cover on habitat quality and determine the impact of brush control efforts. Ultimately, these results will guide spatial prioritization and subsequent monitoring of brush treatments to improve pronghorn habitat.

11:00 AM **Woody Encroachment Effects on Breeding Grassland Birds in the Rolling Plains of Texas**

Alice Mathew, Texas Tech University
Shaelyn Rainey, Texas Tech University
Jesse Haudrich, Texas Tech University
Aaron Norris, Texas Tech University
Caitlyn Cooper-Norris, Texas Tech University
Warren Conway, Texas Tech University

Abstract: Grassland-dependent avian species have experienced the steepest declines of all avian guilds since the 1960s, and throughout Texas, these declines have been a consequence of habitat loss due to severe woody encroachment by honey mesquite (*Neltuma glandulosa*) and redberry juniper (*Juniperus pinchotii*). To assess the influence of woody encroachment and brush pile presence on bird community assemblage, we deployed 7 automated recording units (ARUs) in unmanaged (control) grassland plots and 5 ARUs in managed brush pile plots. We also conducted avian point counts at each ARU and sampled bird use of brush piles 5 times from May 2025 to August 2025. We collected woody plant density, Robel pole visual obstruction, biomass, and percent cover at each ARU. We detected 64 bird species, where Northern cardinals (*Cardinalis cardinalis*) were most commonly detected in woody encroached areas, and dickcissels (*Spiza americana*) were most commonly detected in grass and herbaceous dominated areas. Northern bobwhite (*Colinus virginianus*) presence was positively related to cover ($R^2 = 0.619$, $P = 0.002$). In contrast, we found that presence of dickcissel ($P = 0.601$), Cassin's sparrow (*Peucaea cassinii*; $P = 0.581$), and scissor-tailed flycatchers (*Tyrannus forficatus*; $P = 0.778$) were not related to woody cover. Management of woody cover remains essential for maintaining healthy grassland bird populations. These woody invasives can be effectively managed via chemical and mechanical means, and piling of dead brush is promoted by agencies as an alternative management technique to provide nesting, resting, and escape cover for wildlife.

11:15 AM **Classifying Multiple Vegetation Cover Types Using Very Fine-Scale Imagery**

Shanna Gleason, Texas A&M University - College Station

William Longoria, Texas A&M University - College Station

Jacob Lucero, Texas A&M University - College Station

Javier Osorio Leyton, Texas A&M AgriLife Research

William Rogers, Texas A&M University - College Station

Humberto Perotto-Baldivieso, Texas A&M University - College Station

Abstract: Invasive plants can rapidly dominate a landscape by displacing native species affecting wildlife habitat in Southeast Texas rangelands. Quantifying these invasions at the landscape level will enable land managers to better monitor spread and devise more effective control methods. The objective of this study is to classify multiple vegetation cover types to evaluate invasive and native plant cover at very fine resolutions. We collected very high-resolution imagery (1.3 cm pixel size) on a cattle ranch in Northwest Harris County, Texas in May of 2025. We generated an RGB ortho-mosaic, a Digital Terrain Model, and a Digital Surface Model. A canopy height model was computed from the Digital Terrain Model and the Digital Surface Model, and was combined with the RGB imagery for the image classification. We used an object-based classification approach to classify six types of vegetation cover: Macartney rose (*Rosa bracteata* Wendl.), baccharis (*Baccharis halimifolia* L.), mixed Macartney rose and baccharis, other woody species, herbaceous, and shadows. To assess the accuracy of the classification, we digitized vegetation polygons for each cover type to compute an area-based confusion matrix. Our initial results indicate that we can classify Macartney rose with a 92% accuracy. Upon completion, these fine-scale insights into vegetation cover will further our ability to detect invasive species, quantify an invasion, and to monitor impacts of management. Being able to accurately quantify the amount and distribution of different vegetation types can improve the way we measure and control invasives to maintain productive rangelands for livestock and wildlife.

11:30 AM **Grassland Habitat for Pollinators Under Various Mowing Regimes at Fort Davis National Historic Site**

Eliana Goodwin, Borderlands Research Institute - Sul Ross State University

Abstract: Habitat loss and fragmentation are contributing to the global decline of pollinators; fragile desert ecosystems such as the Chihuahuan Desert are especially susceptible to these changes. Pollinators require structural heterogeneity for shelter, native flowering plants for pollen and nectar, and specific host plants for egg laying and larval rearing. Mowing, which removes floral resources and reduces structural diversity, is a management practice used to improve safety and visibility in areas of interest for tourism. Deferred or reduced mowing, however, may benefit habitat for pollinators and other insects. Managers at the Fort Davis National Historic Site are interested in balancing tourism goals with natural resource conservation. Four treatments have been implemented at the site: deferred mowing, mowing regularly during monsoon season and as needed, mowing once in the fall, and deferred mowing with prescribed fire and mechanical brush removal. We evaluated plants and insect communities at 75 plots across the four treatments in the summers of 2023, 2024, and 2025. In 2023, we recorded the highest cover of non-woody, flowering plants in the area mowed just once in the fall. The same treatment area had the highest abundance of pollinating insects per plot. Areas mowed consistently during spring and summer months had the highest invasive grass cover, the second lowest native forb cover, and the lowest abundance of insects of any treatment type. Our preliminary results suggest that delayed mowing may support pollinator habitat and increase pollinator abundance compared to unmown or frequently mown areas.

11:45 AM Landscape Level Vegetation Change in a Semi-Arid Rangeland Post Large-Scale Wildfire

Conner Ties, Texas A&M University - College Station

Morgan Treadwell, Texas A&M Agrilife Extension

Mollie Kemp, Texas A&M University - College Station

Humberto Perotto, Texas A&M University

Kelley Mundy, Texas A&M University - College Station

Abstract: Understanding the impacts of large-scale wildfire events on semi-arid rangelands is increasingly important due to increased droughts and unpredictable weather. Understanding vegetation responses has important implications for rangeland health. The Smokehouse Creek Fire burned 428,352 ha of the Texas panhandle in late February 2024. This megafire was part of a larger complex spanning the Northeastern Texas Panhandle and western Oklahoma. The wildfire complex burned ~555,200 ha, destroyed 130 structures, and left ~15,000 cattle dead. After containment on March 16, 2024, the Smokehouse Creek Fire became the largest wildfire in Texas history. To access wildfire impacts on vegetation communities, we used satellite imagery, spectral indices, and high-resolution drone imagery. We used Sentinel-2 and SuperDove satellites to gather imagery of the entire burned area and fine-scale imagery of our study sites within it. Then, we applied various spectral indices such as Normalized Burned Ratio (NBR), Differenced Normalized Burned Ratio (dNBR), and Normalized Differenced Vegetation Index (NDVI). Our initial results show that riparian areas had higher burn intensity than upland areas, suggesting higher fuel loads. Our vegetation results show that vegetation is recovering in some areas, with higher mean NDVI values nearly 2 years after the fire than in the year of the fire, and, surprisingly, higher than in the year before the fire. These patterns suggest that areas with initially low NDVI and high burn severity values may have stored greater amounts of fuel. The ability to successfully map this has implications for understanding fuel accumulation in rangeland systems.

Human Dimensions & Conservation Policy

Ivy 1 & 2, February 20, 2026

Moderator: Micayla Pearson

10:15 AM **The Threat of Ferae Naturae to the North American Model**

Jake Hill, Texas Tech University School of Law

Abstract: Over the past decade, litigation involving Texas's deer breeder industry and the state's response to chronic wasting disease (CWD) has generated legal challenges to the North American Model of Wildlife Conservation, particularly its principle of public ownership of wildlife as a public trust resource. A review of recent Texas case law reveals a growing reliance on the common law doctrine of *ferae naturae* to assert private ownership of captive white-tailed deer. *Ferae naturae* is a common law doctrine whose origins go back to the Roman empire whereby wild animals were presumed to be owned by no one specifically but by the people generally. However, this common law doctrine allows property rights in wild animals to arise when an animal is legally removed from its "natural liberty" and subjected to "man's dominion." Such theories threaten the state's ability to effectively manage CWD by creating constitutional obstacles and limiting agency jurisdiction. If courts or lawmakers endorse this common law doctrine, state wildlife authorities could face substantial barriers to implementing disease surveillance, regulation, and enforcement. Addressing these challenges will require coordinated efforts by wildlife professionals and interest groups to promote legislation that reaffirms wildlife as a public trust resource and closes legal loopholes that would enable privatization claims.

10:30 AM Factors Inspiring Committed Collaboration for Wildlife in Texas

Jared Messick, Texas State University

Christopher Serenari, Texas State University

Abstract: In the United States where private lands constitute the majority of land cover in each state, how and why private landowners engage with wildlife and their habitat determines the success of wildlife agencies in applying conservation tools. Agencies in the 21st century are increasingly reliant on cooperative mechanisms like voluntary incentive programs (VIPs) to increase collaboration with landowners. However, research suggests that while VIPs may demonstrate effectiveness in improving immediate and local conservation outcomes, they are historically associated with insufficient enrollment and post-program commitment. Despite scholarly attention to the nexus of landowners and VIPs, the factors that inspire collaboration for conservation across large spatio-temporal landscapes remain unclear. To address this need, we used a relational values lens within a social exchange framework to uncover the cognitive and structural antecedents to collaboration for wildlife on private lands. Results from 76 interviews with landowners across Texas suggest that personal identities, preferences for sustainable landscapes, and virtues of responsible land-use motivate conservation behavior. Landowners established that VIPs are appealing to the degree that they uphold and support these maxims. Findings also indicate that wildlife management is a critical component of large-scale ranching operations across Texas because changing commodity prices necessitate diversified revenue streams, particularly leasing huntable land. Thus, ranchers are committed to conservation because it supports their livelihoods and tend to remain involved in VIPs that promote the success of their hunting operations. Future research will need to address whether self-reported wildlife conservation behavior is amenable to landscape-scale institutional conservation goals.

10:45 AM Stakeholder Perspectives of the Northern Bobwhite Decline in Texas

Kristyn Stewart-Murphy, Caesar Kleberg Wildlife Research Institute - Texas A&M University - Kingsville

Fidel Hernandez, Texas A&M University - Kingsville

Alejandra Olivera-Mendez, Colegio de Postgraduados, San Luis Potosi

Angela Guerrero, Queensland University of Technology

Jon Horne, Idaho Department of Fish and Game

Sabrina Szeto, Sabrina Szeto Consulting

Abstract: Wildlife management and research generally fall within 1 of 3 categories of the wildlife management triad: 1) habitat, 2) wildlife populations, or 3) stakeholders. If conservation is to be effective, efforts should include all 3 components when managing wildlife species, especially those species of high conservation concern. The northern bobwhite (*Colinus virginianus*) is a popular gamebird with high social and economic value that has garnered much research attention due to their alarming distribution-wide decline. However, the majority of this research has focused on their habitat and population dynamics with little attention paid to the stakeholder component. To bridge this gap in knowledge, our objective was to document and summarize stakeholder perspectives on the bobwhite decline in Texas, with specific focus in the northern and southern part of the state. We distributed an online survey (n = 45 questions) in November 2024 that remained open until February 2025, during which we received 2,240 responses (43% northern Texas; 36% southern Texas). More respondents in northern Texas (86%) believed quail were declining in their region compared to respondents from southern Texas (57.2%). In addition, although most respondents agreed on the primary factors influencing bobwhite populations (e.g., habitat loss and rainfall), we documented that a higher percent of stakeholders in northern Texas (42%) believed parasites were a significant factor impacting quail compared to respondents from southern Texas (24%). We discuss the broader significance of these and other findings and provide implications for the conservation and management of the species across its geographic distribution.

11:00 AM TPWD Update: Innovation and Resources for Wildlife Researchers: Knowledge Gaps, Funding Priorities, And New Online Resources

Richard Heilbrun, Texas Parks & Wildlife Department

Kelly Simon, Texas Parks and Wildlife Department

Jonah Evans, Texas Parks & Wildlife Department

Jennifer Marrugo, Texas Parks & Wildlife Department

Abstract: At the 2024 Texas Chapter meeting, TPWD shared a methodology for assessing nongame knowledge gaps and prioritizing research funding. This year, we'll present a completed public-facing website that showcases the final assessment system. This Knowledge Gap Assessment is an integral component of the newest version of the State Wildlife Action Plan, intended to drive the recovery, conservation, and research of all Species of Greatest Conservation Need in Texas. For the first time, we are presenting the plan as a web-based app that allows researchers and land managers to identify the reasons a species is "of concern" and to easily identify knowledge gaps that would move a species from "data deficient" to "conservation ready." Also for the first time, we introduce a portal to enable researchers to easily upload research findings to inform the assessment and statewide species rankings. We also will present the Conservation Opportunity Area mapping project, enabling users to identify potential focal areas for land protection and restoration. TPWD intends to use this system to guide our work on Species of Greatest Conservation Need, and we hope that our partners will see it as a useful tool in identifying the most impactful wildlife research.

Conservation & Ecology of Mammals V

Salon F & G, February 20, 2026

Moderator: Joseph McGovern

1:00 PM Tri-Colored Bat Predation by a Dark Fishing Spider in East Texas

Samantha Leivers, Texas Parks & Wildlife Department

Elijah Lee, Texas Parks & Wildlife Department

Nathan Fuller, USFWS

Abstract: Bats have few natural predators, with birds and snakes being most commonly reported. However, there are also reports of bat predation by large arthropods, including spiders, although recorded cases outside of the Neotropics, Asia, and Australia/Papua New Guinea are rare. Herein, we report an observation of a potential predation event on a *Perimyotis subflavus* (Tri-colored Bat) by a *Dolomedes tenebrosus* (Dark Fishing Spider) at a culvert hibernaculum in East Texas. We believe this to be only the second reported case of predation on a bat by a hunting spider in North America. As Tri-colored Bat numbers are decreasing due to the spread of white-nose syndrome, we discuss the need to consider impacts of spider predation at culvert hibernacula and how climatic events may alter the predator–prey dynamics between these two species.

1:15 PM TMN Bat Acoustic Monitoring Program Seeks to Close the Knowledge Gap for Bat Species Distributions Across Texas

Rachel Grotte, Texas Parks & Wildlife Department

Abstract: Texas is home to over 30 species of bats, more than any other state, yet due to the size of the state and the fact it is predominantly privately owned, much remains to be learned about species occurrence and distribution. Acoustic monitoring is revolutionizing the research process through the passive collection of data. The Bat Acoustic Monitoring Program, created by Texas Nature Trackers, taxon specialists and Texas Master Naturalists, seeks to close this knowledge gap and contribute to the North American Bat Monitoring Program. The 5-year program began in 2024 with 37 chapters, expanding to 45 chapters across Texas. TMN chapters work with landowners or at public land sites to deploy stationary acoustic bat monitors over 9 weeks of summer. Bat recordings were analyzed via Auto-ID with Kaleidoscope Pro analysis, following NABat protocols and regional species lists as determined by bat specialists. Devices used included Audio Moths, SM4's and Mini-Bat2's. Over 29,000 "highly likely" autoclassified recordings were collected in 2024 alone. 29 bat species have been detected to date. Changes to protocols for 2026 include the standard use of Wildlife Acoustics MiniBat2 monitors and a Survey 123 metadata collection tool to improve standardization across sites. Monitoring in some Texas State Parks will also be implemented in 2026. With these improvements we hope to continue expanding the program across the state, providing a holistic view of bat distribution. All data is provided to landowners, to the public, and to the NABat monitoring project, for maximum impact to bat conservation research.

1:30 PM **Great Bat Bridge Survey: A Citizen Science Collaboration with TPWD and TxDOT**

Wendy Anderson, Texas Parks & Wildlife Department

Lauren Young, TxDOT

Samantha Leivers, Texas Parks & Wildlife Department

Noah Ray, Texas Parks & Wildlife Department

Craig Hensley, Texas Parks and Wildlife Department

Abstract: Many bat species in Texas are listed as Species of Greatest Conservation Need, and bridges represent an increasingly important roost resource as natural habitats decline. Our objective was to quantify bat and swallow use of bridge structures in the Austin District of the Texas Department of Transportation (TxDOT) and evaluate structural and habitat correlates of roost presence. We trained 38 Texas Master Naturalist volunteers to implement a standardized, safety-focused 15-minute survey protocol using Survey123 and Field Maps. Bats were detected at 12 of more than 600 surveyed bridges, and swallow nests were documented at over half of the sites. All records are publicly accessible through the Texas Natural Diversity Database to inform conservation management and ecologically responsible development. Documented bat roosts can be revisited by qualified personnel for species-level identification, structural assessment, and post-extreme weather monitoring. Surveys will continue within the TxDOT Austin District and expand to the TxDOT Houston District in the next project phase.

1:45 PM **Occupancy and Activity Patterns of Bats Vulnerable to Wind Energy in Texas**

Maria Ramirez, Texas State University
Madison Nadler, Texas State University
Madison Gover, Texas State University
Sarah Fritts, Texas State University

Abstract: As renewable energy expands, bats, especially *Lasiurus* species (*Lasiurus borealis/blossevillii/seminolus*; hereafter 'red bats', and *Lasiurus cinereus*; LACI), are increasingly threatened by collisions with wind turbine blades. This issue poses a serious risk of population declines or even extinction for these species and is exacerbated by a lack of baseline data on bat activity and occupancy nationwide. To address the risks posed by wind energy development, it is essential to integrate mitigation strategies with data on bat occupancy and activity. This study investigated seasonal bat activity and occupancy in Texas from Fall 2020 to Summer 2023, using two acoustic detectors at each of 48 sites. Red bat species were pooled due to the similarity of their echolocation calls. Red bat occupancy was influenced by temperature in Fall 2020 (AvMaxT, AvMinT, AvTdiff; $p < 0.05$), landcover in Fall 2022 (Wat50km, longitude; $p < 0.05$), and longitude in Summer 2023 ($p < 0.05$). Daily and hourly activity was primarily driven by temperature and humidity, with other bat activity affecting red bats in falls, winters, and springs. LACI occupancy was influenced by landcover in Fall 2020 (Cro10km, Cro50km; $p < 0.05$) and latitude in Spring 2023 ($p < 0.05$). Daily and hourly activity was mainly influenced by temperature, humidity, wind, and pressure, with limited effects of other bat activity in falls, springs, and summers. Understanding bat occupancy and activity and the factors that may influence both can facilitate informed and effective wildlife management decisions. This knowledge benefits bat conservation and may help landowners implement cost-effective strategies for regulating wind turbine operations.

2:15 PM **Little Eaters, Lasting Effects: Do Small-Mammals Shape Restored and Native Rangelands?**

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

Fidel Hernandez, Texas A&M University - Kingsville

Anthony Falk, Texas Native Seeds, Caesar Kleberg Wildlife Research Institute

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

Kristyn Stewart-Murphy, Caesar Kleberg Wildlife Research Institute - Texas A&M University - Kingsville

Benjamin Turner, Texas A&M University - Kingsville

Andrea Montalvo, East Foundation

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

Logan Liesman, Texas A&M University - Kingsville

Abstract: Rangeland restoration can improve biodiversity, ecological functioning, and ecosystem resilience. However, restoration success is often constrained by drought, over-grazing and invasive species. A factor that has received limited attention is herbivory by small-mammals such as lagomorphs, gophers and rodents. We conducted a study on 2 restored sites in Ector (Goldsmith site) and Gaines (Seminole site) counties Texas during May 2024 through November 2025 to evaluate the influence of small-mammal herbivory on restoration success. We established 40 small-mammal exclosures per site along with paired controls. We also trapped small mammals using Sherman traps and estimated burrow density using distance sampling. Plant species diversity and biomass were higher in exclosures (= 13.0 plant species and = 43.5 g/m²) compared to control plots (=11.8 plant species and = 20.8 g/m²; P >0.05). Small-mammals species' richness and burrow density were higher at Seminole site (species richness = 7 species and burrow density = 44 burrows/acre) compared to Goldsmith site (species richness = 1 specie and burrow density = 2 burrows/acre; P >0.05). These findings highlight the need to consider small-mammal herbivory during restoration planning in western Texas.

2:30 PM **A Definitive Test of the Habitat Requirements of the Texas Kangaroo Rat**

Maya Folkes, Texas State University

Joseph Veech, Texas State University

Abstract: The Texas kangaroo rat (*Dipodomys elator*, TKR) is currently endemic to only a few counties in north Texas. It has been proposed for federal listing and the state of Texas considers it to be a species of greatest conservation need. As such, over the past 10 years there has been substantial research to better document its current geographic distribution, population status, and habitat requirements. This research has revealed a strict association with clay and clay-loam soils. Additionally, previous research strongly suggested that TKR avoids thick grassy vegetation and woody canopy cover. As a corollary, its required habitat is thought to be sparse grassy vegetation with 30 – 70% bare ground. This assessment is likely correct, however no one has directly demonstrated that Texas kangaroo rats behaviorally avoid thick grass. For the first time, we demonstrate this avoidance. Our experimental design revealed that Texas kangaroo rats will not venture from areas of sparse low-growing vegetation into thicker taller vegetation. We constructed artificial burrows, as an attractant, in mowed and unmowed plots and deployed wildlife cameras to document investigation and use of the burrows by TKR and other rodent species. There was no instance in which TKR was recorded at a burrow in tall vegetation although several other species often were, including *Chaetodipus hispidus*, *Onychomys leucogaster*, and a *Peromyscus* species. TKR did investigate and sometimes use burrows on the mowed plots. These results indicate that habitat management for this species should consist of routine mowing and intensive livestock grazing.

2:45 PM **Population Densities and Habitat Associations of Native and Exotic Ungulates in the Edwards Plateau of Texas**

Carsten Groos, Texas Tech University, Lubbock, Texas, USA

Warren Conway, Texas Tech University, Lubbock, Texas, USA

Courtney Ramsey, Texas Tech University, Lubbock, Texas, USA

Abstract: Despite the regional importance of both native and exotic free-ranging ungulates in the Edwards Plateau (EP) of Texas, few data exist on regional densities, habitat associations, and interactions of sympatric species. Previous studies and anecdotal testimony suggest that native white-tailed deer (*Odocoileus virginianus*) are ubiquitously distributed across the EP, while feral exotic species are assumed to occupy habitats similar to those found in their native ranges. No population estimates, nor specific habitat associations, have been developed for white-tailed deer, axis (*Axis axis*), and blackbuck (*Antelope cervicapra*) in the EP. We performed 3 spotlight surveys on 4 routes, and 4 spotlight surveys on 7 routes, in 6 EP counties in 2025 in a distance sampling framework, to estimate regional and cover-type specific density estimates for these species. From February to August 2025, we detected 3321 animals (group size 1-21) of 8 species and estimated 28.5 (95% CI: 22.4 – 32.9) white-tailed deer/km², 10.3 (95% CI: 7.4 – 13.4) axis deer/km², and 5.5 (95% CI: 3.0 – 8.0) blackbuck/km². After modifying a TPWD cover type layer of our study region from 77 original to 14 new cover types, we confirmed that white-tailed deer are ubiquitously distributed through the EP landscape, while axis deer reach greatest densities in floodplain forests, and blackbuck densities are greatest in deciduous shrublands. These data provide the first regionally relevant density estimates for axis deer and blackbuck, and can be used to develop proactive habitat, harvest, and disease management strategies for all three species where they are sympatric.

Conservation & Ecology of Birds V

Vine 1 & 2, February 20, 2026

Moderator: Meghan Riley

1:00 PM Avian Diversity and Species Response to Ashe Juniper Mitigation Along Riparian Corridors

Cameron Starnes, Tarleton State University

Zachary Bellows, NA

Heather Mathewson, Tarleton State University

Abstract: Restoration of riparian and grassland areas is necessary to remove woody vegetation encroachment, which can create short-term disturbance to an area but increase heterogeneity in the system over time. Avian diversity is expected to increase when stands of monospecific non-riparian trees are removed, opening the canopy and understory to allow for increased herbaceous and woody cover. As part of a riparian restoration project in north-central Texas since 2021, our objective is to evaluate how habitat restoration influenced avian diversity and species response in riparian areas adjacent to a juniper-encroached grassland. We predicted that the removal of dense juniper stands would result in increased diversity and many species will positively respond to the removal. We conducted our study along riparian corridors in north-central Texas from 2023–2025. Contractors removed Ashe juniper (*Juniperus ashei*) once/area in 2020 and 2022, along approximately 25m buffers perpendicular to the stream bed and we re-seeded with a mixture of native forbs and grasses. We conducted avian point counts at 10 treated and 10 control sites during the spring, summer, and late fall for all bird species. Shannon's Diversity indices for years by treatments ranged from a mean of 1.44–2.37, suggesting a difference in diversity between years and seasons but little difference in diversity between treatments. Similar results were seen in single-species and species grouping analyses. Our approach identifies some of the difficulties in applying broad-scale evaluations when fine-scale spatial and temporal variation are high, and when standardization of restoration practices are untenable.

1:15 PM Avian Community Response to Removal of Encroaching Woody Vegetation in Trans-Pecos Grasslands

Audrey Taulli, Borderlands Research Institute - Sul Ross State University

Maureen Frank, Borderlands Research Institute - Sul Ross State University

Carlos Gonzalez, Borderlands Research Institute - Sul Ross State University

Justin French, Borderlands Research Institute - Sul Ross State University

Abstract: The grasslands of North America are one of the fastest declining habitat types on the continent. This is due to a variety of reasons, including energy conversion, livestock grazing, and woody plant encroachment. As a result of this habitat loss, grassland-obligate bird species are in steep decline across the continent. An estimated 88% of migratory grassland birds overwinter in the Chihuahuan Desert. Woody plant encroachment within the Chihuahuan Desert has decreased available grasses, leading to a reduction in winter food availability and nocturnal thermal cover. Encroached woody vegetation also provides more habitat and perching opportunities for avian predator species, such as loggerhead shrikes (*Lanius ludovicianus*) and American kestrels (*Falco sparverius*). Grassland restoration efforts typically involve brush removal using herbicide, mechanical removal, and fire. In the Trans-Pecos, we are studying sites within the Marathon and Marfa grasslands where herbicide and mechanical removal have been used on mesquite (*Prosopis glandulosa*) varieties, creosote bush (*Larrea tridentata*), and tarbush (*Flourensia venus*). We conducted non-breeding bird surveys on a control site, a site 3 years post-herbicide treatment, and a site that used mechanical removal 4 years after having been treated with herbicide. Overall, modeling the impacts of the treatments explained 13.21% of the deviation of bird communities in encroached and treated areas from those of grassland areas ($R^2 = 0.1321$, $F = 5.81$, $p < 0.001$).

1:30 PM Wild Turkey Populations Retain High Genetic Diversity and Connectivity Amid Regional Declines in The Edwards Plateau Ecoregion of Texas

Clarissa Molina, University of North Texas
Andrew Gregory, NA

Abstract: The Edwards Plateau ecoregion (EPE) of Texas is the center of the historic range of the Rio Grande Wild Turkey (*Meleagris gallopavo intermedia*; RGWT). Recent population declines across the EPE may be linked to riparian degradation, invasive species, disease, and fire suppression. Riparian degradation can fragment habitat and reduce roost availability, increasing population isolation and vulnerability to genetic threats such as inbreeding depression and extirpation. Our objective was to assess the status of RGWT through a baseline analysis of regional genetic diversity and population connectivity. We performed microsatellite analysis on blood samples from 12 counties to characterize genetic structure, diversity, and gene flow among populations. To assess potential dispersal barriers, we developed a resistance surface by reclassifying land cover, road, and waterway rasters by resistance values and integrating them into a single raster. We identified three genetically diverse clusters that exhibited substantial geographic overlap while remaining genetically distinct. All three clusters converged in the northwest where populations possessed the highest genetic diversity. Several high-resistance areas corresponding to prominent urban centers were detected in the southeastern EPE, but overall the region appears to possess high gene flow and a low risk of inbreeding depression. Our findings provide a baseline for understanding how riparian degradation and land use changes may affect RGWT populations. Regional genetic analyses offer vital insight into the adaptive potential of wild turkey populations and inform beneficial management strategies.

1:45 PM **Conservation Genomics in a Changing Landscape: Genetic Structure and Dynamics of Hybridization of Wild Turkey in Oklahoma**

Michael Barrett,

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

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

R. Dwayne Elmore, Tall Timbers Research, Inc.

Colter Chitwood, Oklahoma State University

Craig Davis, Oklahoma State University

Sam Fuhlendorf, Oklahoma State University

Kent Andersson, Oklahoma State University

Nicolle De Filippo, Oklahoma State University

Cody Griffin, Oklahoma State University

Cyrena Bedoian, Oklahoma State University

Abstract: Anthropogenic pressures have led to loss of biodiversity globally via ecological state transitions, restructuring of biological communities, and shifting of species distributions. For instance, wild turkey (*Meleagris gallopavo*; hereafter turkey) populations within the southern Great Plains, USA have experienced range-wide decline attributed to shifts in land use, vegetation communities, and climate. Situated within a broad contact zone between Eastern and Rio Grande subspecies, such pressures may ultimately reshape genetic composition and affect management decisions. Oklahoma has experienced some of the largest reported declines of turkey populations and represents a poorly understood area within the hybrid zone. Using genomic data, we assessed genetic variation, structure, and gene flow among turkeys sampled across Oklahoma. Tissue samples gathered from hunter-harvested birds during 2022–2024 yielded whole genome sequence (18x coverage) data from 298 individuals in 66 (of 77) counties. Analysis of 1.3 million single nucleotide polymorphisms revealed low to moderate genetic differentiation (F_{ST} : 0.0005–0.067) across 6 administrative regions in the state. Population structure analysis supported two genetic clusters corresponding to subspecies and revealed extensive admixture. Genomic cline analysis indicated largely symmetric introgression consistent with bidirectional gene flow. Although contemporary migration estimates support ongoing genetic exchange, reduced gene flow from the southeast region suggests population declines may affect connectivity. Our results validate a long-suspected hybrid zone, while revealing more extensive admixture and back-crossing than previously expected. This work establishes a critical genetic baseline for monitoring how intensifying environmental pressures may disrupt connectivity and alter genetic composition among turkey populations throughout the Great Plains.

2:15 PM **Black-Capped Vireo Habitat Associations and Thermal Microclimate Variability in Shrub Canopies in the Edwards Plateau**

Sarah Macha, Angelo State University

James Giocomo, American Bird Conservancy

Tania Homayoun, Texas Parks & Wildlife Department

Ben Skipper, Angelo State University

Andrew Kasner, Texas A&M AgriLife Research

Abstract: Environmental factors such as habitat and temperature affect community composition and nest success of shrubland birds. We measured shrub canopy temperatures at 60 randomly selected avian point-count locations at Kickapoo Caverns State Park (KCSP) and South Llano River State Park (SLRSP) during post-delisting population monitoring for Black-capped vireo (*Vireo atricapilla*) from 1 May–5 July 2025 in the southwest Edwards Plateau. We placed data loggers (recording temperature every 15 min) and autonomous recording units (ARUs, recording bird vocalizations) at point-count locations (KCSP, n=40) and (SLRSP, n=20), distributed about equally in broad-leafed shrubs and Ashe juniper (*Juniperus ashei*). We detected a total of 22 bird species (range=1-8) at KCSP and 29 species (range=1-7) at SLRSP, including 10 points with Black-capped vireos. Mean daily maximum temperature was higher in junipers than in broad-leafed shrubs at KCSP (juniper: $38.43^{\circ}\text{C}\pm 0.30\text{SE}$; broad-leafed: $37.65^{\circ}\text{C}\pm 0.31\text{SE}$; $U = 36348.50$, $P = 8039.50$, $P = 0.031$). Paired data loggers were deployed at nest sites (n=9) in broad-leafed shrubs with nests and the nearest juniper (within 10m). In nest territories, daily maximum temperature was higher in juniper (n=86; $36.50^{\circ}\text{C}\pm 0.49$) than in broad-leafed shrubs ($P < 0.001$). During drought years, with presumably higher temperatures, black-capped vireos use junipers for nesting disproportionately more than expected with low nest success. Our results suggest the difference between juniper and broad-leafed shrub canopy temperatures may be biologically significant regarding potential nest success of shrubland birds in juniper dominated regions, highlighting the importance of prescribed fire and other tools for mitigating juniper invasion in semi-arid savannahs.

2:30 PM **How Does Temperature Variation Across Latitudes Influence Early Songbird Development?**

Lindsey Willingham, Tarleton State University

Heather Mathewson, Tarleton State University

Britt Heidinger, North Dakota State University

Abstract: Climate change is increasing temperatures and extreme weather, creating stressful conditions for songbirds during breeding. Temperature stress can constrain reproduction by affecting adult behavior and offspring development. Because temperature patterns vary with latitude, populations may experience different reproductive constraints. We used house sparrows (*Passer domesticus*) to investigate how temperature influences hatching success and nestling body size in Stephenville, Texas and Fargo, North Dakota. Our objectives were to 1) evaluate how embryo survival varies with temperature, 2) assess temperature effects on nestling body size, and 3) examine how parental incubation and feeding mediate temperature effects. We monitored nest box populations during March–August of 2022–2025. From unhatched eggs we estimated date of and age at mortality. We recorded parental behavior using video cameras in the mornings, estimated prey size, and recorded nestling morphological measurements. We recorded ambient and nest box temperatures using iButtons. Using Bayesian time-to-event analysis, we found no relationship between embryo mortality and temperature. Using generalized mixed models and an information-theoretic multi-model evaluation approach, we found a general decrease in feeding rate with increasing temperature but this relationship in the two states depended on the temperature metric (e.g., maximum or variation) and interaction with prey size. We found no temperature influence on nestling mass in Texas. In North Dakota temperature predicted nestling mass during extremely cold days and only when adults reduced feeding rate. Our results indicate temperature effects vary by developmental stage and differ across latitudes, showing the importance of incorporating regional climate variation into conservation strategies.

2:45 PM **Bioaccumulation of Microplastics in Mississippi Kites**

Madison McGinnis, Texas Tech University

Scott Collins, Texas Tech University

Clint Boal, US Geological Survey

Abstract: Plastic pollution poses a substantive risk for animal and human health. Microplastics (< 5 mm) are especially prevalent in aquatic systems and may bioaccumulate from prey to predators associated with these systems. We assessed microplastics in Mississippi kite (*Ictinia mississippiensis*) specimens (n = 18; 11 adult, 7 nestling) in Lubbock, TX. Locally, the primary prey of Mississippi kites are dragonflies (Odonata) and cicadas (Hemiptera), each of which has a life history that includes occupancy of water bodies and adjacent moist soils, respectively. Mississippi kites specimens were stored at -20° C until thawed for analyses. We collected breast and liver tissue from each bird, wrapped each tissue sample in aluminum foil, labeled the sample, and froze it until further processing. Prior to tissue digestion, we weighed the wet mass of each sample to the nearest gram. Samples were digested in a 10% potassium hydroxide solution for 24 hours and then placed in an oven at 50° Celsius. Following digestions, we filtered samples to capture plastics. Each filter was dried, then observed under a microscope with UV light to identify microplastic fragments and filaments. Microplastics were found in both liver and muscle tissue of nestlings (71% and 57%, respectively) and adults (64% and 35%, respectively). Microfragments were correlated with wet mass of liver (p=0.019) but not muscle (p=0.063). Microfibers were also correlated with wet mass of liver (p=0.0467) but not muscle (p=0.626). This study demonstrates a substantial prevalence of microplastics among Mississippi kites and is evidence of microplastic contamination throughout trophic levels.

3:00 PM **Migratory Ecology of Wilson's Snipe**

Kevin Perozeni, Texas A&M University - College Station

Ashley Long, Texas A&M University - College Station

Abstract: Migratory shorebirds are experiencing global population declines, driven primarily by habitat loss, habitat degradation, and climate change. Despite these threats, the movement ecology of many shorebird species remains poorly understood, limiting our ability to develop effective conservation strategies for these taxa. Wilson's Snipe (*Gallinago delicata*; hereafter snipe), is a widespread and legally hunted North American migratory shorebird that faces multiple threats across its broad range and are understudied everywhere they occur. Our objective was to examine the movement ecology of snipe that overwinter in Texas and Louisiana. Between December 2024 and March 2025, we used nocturnal spotlighting to capture 67 overwintering snipe at five sites and attached GPS transmitters to 35 individuals to quantify the timing, duration, and location of their movements within and across seasons. Our data revealed novel insights into flight speeds during migration (55–128 kmh); nightly (150–1,200 km) and cumulative distance traveled (>6,000 km); and altitude during migration (50–4,000 m). We also documented their migratory pathways and found evidence of site fidelity to stopover locations for some individuals. Our research provides data to inform management for this unique migratory game bird and information to help predict how snipe may respond to future changes in land use or environmental conditions. Moreover, our project offers a unique opportunity to engage landowners, hunters, and birders in shorebird conservation.

Conservation & Ecology of Wildlife Communities

Ivy 1 & 2, February 20, 2026

Moderator: Sam Kieschnick

1:00 PM Ecological Impacts of Light Pollution from Ground and Space: Sunlight on Demand a Literature Review.

Teznie Pugh, McDonald Observatory, University of Texas at Austin

Steven Hummel, McDonald Observatory, University of Texas at Austin

Abstract: Astronomers have long led efforts to raise awareness about the effects of artificial light at night (ALAN). While the ecological impacts of ALAN are increasingly researched and understood, global lighting levels continue to rise, exacerbating these concerns. A new threat emerged with the rapid expansion of objects in low Earth orbit (LEO), notably since SpaceX's 2019 Starlink launch, satellite numbers have increased from approximately 2,000 to over 12,000 in five years. Astronomers have dedicated significant effort to quantifying the scientific and economic impacts of these objects, particularly through the loss of astronomical data. But broader concerns have also emerged, including the environmental consequences of atmospheric burn up and the jurisdictional challenges posed by falling orbital debris. As the space economy grows, novel uses for LEO are being proposed, broadening potential impacts. One such proposal aims to deploy at least 4,000 solar reflectors to provide "sunlight on demand" to nighttime customers. This initiative poses the same risks as terrestrial light pollution and satellite proliferation yet lacks proven mitigation strategies. Moreover, the intended reflections are four times brighter than a full moon and direct reflections are potentially damaging to eyesight. Here, we review the literature on impacts of ALAN and LEO satellites on wildlife and make the case for the expected harm to plant and animal populations in Texas from continued growth of these two issues, especially programs like that highlighted above. Further, we invite future interdisciplinarity research efforts to address these emerging issues.

1:15 PM **A Systematic Review of Wildlife Research in Loblolly Pine Forests and Plantations**

Reuber Antoniazzi, Stephen F. Austin State University

Gabriel Andrade-Ponce, Stephen F. Austin State University

Andrew Moore, Stephen F. Austin State University Student Chapter of The Wildlife Society

Karen Velasquez, Instituto de Ecologia

Abstract: Loblolly pine (*Pinus taeda*) is the dominant commercial timber in the southeastern United States, occupying more than 10 million ha. Loblolly pine has also been established in large-scale plantations for timber production in South America, Africa, Asia, and Oceania. Brazil alone supports ~1.9 million ha of pine plantations in which *P. taeda* is the main pine species. Understanding the relation of loblolly pine plantations with wildlife communities has become a key conservation and management question. We conducted a systematic literature review to evaluate the research on wildlife inhabiting loblolly pine forests and plantations worldwide. From a total of 3,439 records, we retained 336 articles after removing duplicates, screening, filtering based on our criteria, and adding relevant literature not found on the search. The absolute majority of studies were conducted in the US (95%), where South Carolina topped the number of studies in the US (29%). The most studied taxonomic classes were Aves (34%), Mammalia (28%), Insecta (19%), Amphibia (7%), and Reptilia (6%). The most common aspects of wildlife evaluated were habitat use, diversity, population, behavior, and reproduction. Only part of the studies used loblolly as a factor when comparing to other vegetation types (62%), and even fewer (18%) reported the pine stand age. Forest management practices, e.g., thinning and burning, were used as a factor in 42% of all studies. This systematic review highlights gaps in our knowledge on the wildlife research in loblolly pine plantations, in terms of study locations and aspects of wildlife evaluated.

1:30 PM **Pollinator Attractiveness and Ecological Value of Common Landscape Plants**

Addison Singleton, Tarleton State University
Heather Mathewson, Tarleton State University
Adam Mitchell, Tarleton State University

Abstract: Flowering plants are vital in supporting pollinators in urban landscapes; however, landscape plants are often selected based on availability, aesthetics, or perceived ecological value, leading to landscapes dominated by cultivated or non-native plants that have been introduced for ornamental purposes. Artificial selection for ornamental floral traits disrupts natural selection by native pollinators and can produce dishonest or novel signals that reduce forage value. As such, ornamental plants highly visited by pollinators appear beneficial but may act as ecological traps that undermine ecological interactions. In addition, the ornamental plant trade is the largest contributor to invasive plant introductions. As the percentage of urban areas in Texas continues to increase, there is a need to identify suitable landscape plants that provide quality floral resources and promote ecosystem integrity. The purpose of our study is to assess pollinator attractiveness and ecological value of common plants found in residential landscapes across Texas. We used data collected by community science participants in the Oklahoma-Texas Community Science Pollinator Project from 2019–2021 to identify the most common plants used in landscapes across Texas and determine visitation by pollinator groups. Our preliminary findings identified that the most common plants were either non-native, invasive, or cultivated (Wilcoxon rank-sum, $p < 0.001$), suggesting host plant preference may be masked by market availability. We will compare overall attractiveness of plants to insect pollinators and evaluate ecological risk based on biogeographic and invasive status. Our results will identify commercially available landscape plants suitable for conservation efforts in urban ecosystems across Texas.

2:15 PM **Impacts on Wildlife Community Assemblage in the Borderlands of Southwest Texas from Anthropogenic Influences and Resource Availability**

Jesse Ellgren, Borderlands Research Institute - Sul Ross State University

Louis Harveson, Borderlands Research Institute - Sul Ross State University

Amanda M. Veals Dutt, Borderlands Research Institute - Sul Ross State University

Caitlin Camp, NA

Justin French, Borderlands Research Institute - Sul Ross State University

Abstract: Global increases in international border infrastructure has been documented to increase habitat fragmentation while limiting population connectivity and gene flow in transboundary wildlife populations. Understanding how these security measures affect wildlife populations, especially threatened species, is vital for binational conservation. Since 1988, the American black bear (*Ursus americanus*) started to recolonize their native range in Texas. However, this has coincided with an expansion of international border infrastructure, surveillance activity, and other anthropogenic landscape changes along the US-Mexico border. With the natural recolonization of this state threatened species, we will evaluate how current anthropogenic factors and environmental variables shape not only black bear populations, but broader community dynamics. We deployed 50 trail cameras in a stratified random grid within a 12km buffer from the Rio Grande, across Val Verde, Kinney, and Maverick counties. Each randomly selected unit hosts a camera to collect presence data for evaluating how anthropogenic and environmental variables influence species abundance, richness, and temporal activity. Our preliminary results indicate a high relative species abundance (average detections per 100 trap nights): 10.71 for white-tailed deer (*Odocoileus virginianus*), moderate 1.99 for coyotes (*Canis latrans*), 1.92 for feral hog (*Sus scrofa*), and very low 0.01 for black bear. For all native species we observed crepuscular activity, while livestock and humans/vehicles were predominately detected during diurnal hours across all camera sites. Further analysis of our complete dataset will help us identify the influence of anthropogenic and landscape variables on wildlife community dynamics to guide managers and landowners to conserve the borderlands.

2:30 PM: **Native Grassland and Habitat Restoration: From Agriculture to Costal Prairies**

John Herschberger, Texas Native Seeds

Abstract: South Texas is historically known for its large spans of Rangeland and Agricultural production. Over the past several decades with the boom of urban development in the Rio Grande Valley (RGV), the native rangelands have felt the impact through urbanization and agricultural development. In efforts to restore native grassland and wildlife habitat in the Lower Rio Grande Valley, Laguna Atascosa National Wildlife Refuge (LANWR) partnered with Texas Native Seeds Programs (TNS). In spring of 2025, 140 acres of agricultural farmland were planted utilizing locally adapted commercially available native seeds. The restoration objective was to convert agricultural farmland into native grassland, providing native grassland for Aplomado Falcons. The restoration site is comprised of two different soil types (Olmito silty clay and Benito clay), and is surrounded by costal prairies and wetlands, and South Texas shrublands. Initial sampling of the plantings indicates that the plantings are effective and are establishing well throughout the restoration planting with promising results. While initial sampling indicated no current signs of nesting of Aplomado Falcons have been observed, other local wildlife has been utilizing the native grasslands. Future goals of restoration efforts are to provide native grassland habitat for the threatened and endangered wildlife in the area. The ongoing partnership with Laguna Atascosa National Wildlife Refuge provides valuable data, knowledge, and opportunities for advancing native grassland restoration throughout South Texas, supporting broader conservation efforts in the Lower Rio Grande Valley.

Abstracts: Student Poster Competition
Exhibit Hall A1 & A2, February 18, 2026
4:00 PM – 5:15 PM

1. Into The Shadows: GPS-Video Collar Footage Uncovers Factors Influencing Desert Bighorn Sheep Use of a Thermal Refuge

Dylan Stewart, Texas A&M University - College Station

E. Alejandro Lozano-Cavazos, Universidad Autónoma Agraria Antonio Narro

Stephen Webb, Texas A&M Natural Resources Institute

Abstract: Caves provide a cooler microclimate than surrounding landscapes, especially during hot, summer months. Desert bighorn sheep (*Ovis canadensis mexicana*) inhabit hot, arid regions, so caves may offer thermoregulatory advantages. Despite the importance of caves as thermal refuges, the timing and factors driving their use remains poorly understood. To evaluate the use of caves, we fitted 16 (9 F; 7 M) desert bighorn sheep with GPS collars, 9 (5 F; 4 M) of which had video capabilities. We used generalized linear mixed models to investigate the determinants of cave use and predict interannual trends. Cave use was predicted by temperature, relative humidity, solar radiation, and daylength and increased nearly 17-fold as ambient temperatures rose from 30°C to 40°C. Bighorn sheep selected caves on north-facing slopes during July and August. Model predictions indicated that cave use peaked at midday during June, July, and August, whereas cave use was infrequent during cooler seasons and at night. Despite the thermoregulatory benefits of caves, most midday bedding sites were in rock bands, beneath tree canopies, and under columnar cacti. These findings reveal the importance of favorable microclimates for desert bighorn sheep, especially during the hottest periods of the year and day. Bighorn sheep used multiple types of thermal refuges, including caves, despite the potential that caves can reduce visibility and predispose sheep to predation. We suggest that wildlife managers consider constructing permanent wildlife waters intended to support desert bighorn sheep near caves located on north-facing slopes, where thermoregulatory benefits are likely to be greatest.

2. Identifying Nesting Attempts of Northern Pintail Outside the Primary Breeding Areas

Ashley Cano-Johnson, Texas A&M University Kingsville Student Chapter of The Wildlife Society

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

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

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

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

Bart Ballard, Texas A&M University - Kingsville

Abstract: Effective conservation relies on accurate and representative demographic data. Traditional breeding surveys for waterfowl are often limited in spatial coverage (ground surveys) or depend on assumptions about breeding status (i.e., aerial surveys). The northern pintail (*Anas acuta*, hereafter pintail) is a species of conservation concern in North America, primarily nesting in the Prairie Pothole Region (PPR) and interior Alaska. During drought years, pintails are known to shift their distribution to northern Canada; however, individuals settling outside core areas are often assumed to be non-breeders, despite limited direct evidence. With increasing drought frequency in the PPR, pintails may be more likely to settle and potentially nest outside the traditional breeding areas. Our objective is to estimate the proportion of marked female pintails that nest outside the PPR and Alaska. From 2019-2024, we deployed GPS-GSM transmitters with onboard triaxial accelerometers on females wintering across the U.S., resulting in 311 bird-years of data. We will identify nest sites using a series of spatiotemporal filters: locations occurring from 1 April to 1 August, that are located on land, with movement speeds < 5 kph (i.e., not flying), and revisited at least 23 days during dawn hours will be considered as potential nest attempts. Successful nests will then be used to train a machine-learning model to detect failed nesting attempts. This approach provides an objective framework to assess pintail nesting across North America. Findings will improve understanding of pintail breeding ecology and inform adaptive waterfowl management amid changing climate and habitat conditions.

3. Effects Of Experimental Venue on Chinese Tallow Leaf Litter Decomposition: Implications for Wetland Research

Ane Elizondo, Stephen F. Austin State University Student Chapter of The Wildlife Society

Caleb Mullins, Stephen F. Austin State University

Cord Eversole, Stephen F. Austin State University

Abstract: Leaf litter decomposition is a fundamental process that drives nutrient cycling, carbon storage, and overall aquatic ecosystem function. Invasive species such as Chinese tallow (*Triadica sebifera*) can disrupt these processes due to their rapid decomposition, which alters water chemistry and triggers cascading effects throughout aquatic systems. Because of its widespread invasiveness and ecological impact, mesocosm studies are increasingly used to examine tallow leaf litter decomposition. However, the influence of experimental venue on decomposition outcomes remain poorly understood. This study evaluated how experimental venue influences *T. sebifera* leaf litter decomposition by monitoring water-quality responses over 35 days. Venues included a 16 oz plastic container, 1-gallon plastic bucket, 5-gallon glass aquarium, and 10-gallon glass aquarium. Leaf volume (1 g/L) and pre-settled aged water were standardized across venues and water-quality variables were measured daily using a YSI ProDSS multiprobe meter. Results indicate that venue characteristics substantially influenced decomposition dynamics. Salinity and specific conductivity increased most strongly in the 1-gallon plastic bucket, while the 16 oz container showed early spikes followed by high variability and a late decline; in contrast, the 5 and 10 gallon glass aquaria remained comparatively stable. Dissolved oxygen dynamics also varied. For example, smaller venues maintained higher oxygen concentrations, whereas larger venues exhibited lower concentrations and sharper early declines. These patterns suggest that container volume, material, and surface-area-to-volume ratios likely influence the microenvironmental conditions during decomposition. These findings highlight that methodological choices, including venue selection, shape observed decomposition outcomes and should be carefully considered when designing or comparing aquatic mesocosm experiments.

4. High Output, High Impact: Reproductive Ecology of Wild Pigs in Southcentral Oklahoma

Abigail Dwelle, Texas A&M University - College Station

Stephen Webb, Texas A&M Natural Resources Institute

James Beasley, University of Georgia

Sarah Chinn, National Oceanic and Atmospheric Administration

Abstract: Wild pigs (*Sus scrofa*) continue to expand across the United States, posing major ecological and economic challenges and causing an estimated >\$3.4 billion in agricultural damage annually. Their rapid population growth is driven by high reproductive potential, generalist behavior, and limited natural predators, especially for adult animals. Effective management, which often relies on lethal harvest, is influenced by fecundity parameters such as litter size, number of litters per year, and seasonal timing. We quantified reproductive parameters of wild pigs collected across ~7,300 ha in southcentral Oklahoma, which is part of the Cross Timbers and Prairies ecoregion. We collected data from 2015 to 2019, but herein, we present preliminary results from intensive sampling in April 2019. Of the 32 sows sampled in April 2019, most were yearlings (53.1%) followed by adults (18.8%), juveniles (15.6%), and subadults (12.5%). Fourteen sows (44%) were lactating with an average teat count of 9.87 ± 0.56 SD, and 12 sows (38%) were pregnant with an average litter size of 4.9 ± 1.5 SD. Of the 46 fetuses sampled, 54% were female and 46% were male, but 10 fetuses did not have sex recorded. Predicted conception dates from this sample of pigs ranged from 13–21 January 2019, and farrowing dates ranged from 7–15 July 2019, assuming a gestation period of 115 days. These results confirm consistently high reproductive fecundity and suggest whole-souder removal timed to peak reproductive pulses may maximize control effectiveness.

5. Vegetation Characteristics and Seasonal Activity Patterns of Plains Spotted Skunks in South Texas Rangelands

Lee Cottle, Stephen F. Austin State University

Cord Eversole, Stephen F. Austin State University

Jessica Glasscock, Stephen F. Austin State University

Reuber Antoniazzi, Stephen F. Austin State University

Scott Henke, Texas A&M University-Kingsville

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

Gabriel Andrade-Ponce, Stephen F. Austin State University

Abstract: Historically, the Plains Spotted Skunk (*Spilogale interrupta*) was commonly found throughout its range in the midwestern and southeastern United States. However, the species experienced a substantial decline between 1940's and 50's, and as a result, is now considered a species of conservation concern. Despite this, a dearth of information exists on the natural history and ecology of this species, especially from Texas. We used camera trapping to assess the influence of vegetation characteristics, such as vegetation height, density, and canopy cover, and seasonality, on the detection of Plains Spotted Skunks at the Welder Wildlife Refuge, San Patricio County, Texas, USA. We found that stem count positively influenced skunk detection, while canopy cover and vegetation height were not significant. Month had a significant impact on skunk detection, with August, September, and October having the highest detection frequency of skunks, likely due to increased vegetation growth following increased precipitation. Our results suggest that the Plains Spotted Skunk may be more abundant in south Texas than previously thought. Additionally, our results demonstrate that skunks select for increased vegetation density and complexity reflected in the lower habitat strata, likely for avoiding predators and thermal stress. In order to manage habitat in south Texas for this species, our results demonstrate that it may be beneficial to retain brush and understory complexity. Moreover, continued research and monitoring is imperative to fully understand Plains Spotted Skunk autecology and to refine management and conservation strategies for this species across its range in North America.

6. Evaluating the Effects of Grazing Practices on Forage Production, Cover, Species Composition, and Soil Moisture in the Marfa Grasslands, Texas

Ty Goodwin, Sul Ross State University

Carlos Gonzalez, Borderlands Research Institute - Sul Ross State University

Justin French, Borderlands Research Institute - Sul Ross State University

Silverio Avila, Texas A&M Agrilife Extension

Abstract: Desert grasslands are crucial ecosystems to humanity that support a diverse array of wildlife species and provide valuable resources for livestock production. However, due to low and variable rainfall, the Trans-Pecos desert grasslands are vulnerable to severe habitat degradation if livestock operations over use delicate resources. The choice of grazing system has long been debated, with proponents arguing that one offers greater benefits in meeting a landowner's goals and sustaining functioning rangelands. Therefore, this project aims to identify and compare grass species cover, annual forage production, and soil moisture between a rotational, continuous, and exclosed grazing system in a desert grassland of the Trans-Pecos ecoregion of Texas. I randomly placed 690 0.25 m² plots in present grazing systems on the Mimms Unit, confined to two soil types (Marfa-clay-loam [MCA] and Musquiz-clay-loam [MZA]). Interactions between grazing pressure and unique soil type can produce varying effects on vegetation communities and soil moisture. I collected after the growing seasons of 2023 with ~250 mm and 2024 with ~75 mm total precipitation. Grazing systems, soil type, their interaction, and annual conditions did not affect forage production inside of banded vegetation. Both the rotational and continuous system increase species richness. The continuous system increased soil moisture on both soils and increased the amount of vegetation proportion of the landscape on the MZA soils. The rotational system has similar effects on vegetation as no grazing. The severe drought of 2024 negated any major effects from grazing systems.

7. Avifaunal Response to Restoration of Small, Isolated Prairies

Katie Fraser, Stephen F. Austin State University

Christopher Schalk, USDA Forest Service

Josh Pierce, USDA Forest Service

Richard Schaefer, USDA Forest Service

Jessica Glasscock, Stephen F. Austin State University

Cord Eversole, Stephen F. Austin State University

Abstract: Blackland prairies are one of the most critically threatened ecoregions in Texas. In the early 2000s, the United States Forest Service (USFS) initiated restoration of small, isolated Blackland prairie remnants in the Sam Houston National Forest. While restoration activities were ongoing, the USFS established annual winter bird surveys within the managed prairies, documenting both the resident and migratory species, as a metric to assess the success of the restoration efforts. Habitat measurements were collected concurrently to quantify the vegetative structure and cover within the prairies. With these data, we quantified the relationships between habitat characteristics and relative abundance of Henslow's sparrow and sedge wren, two species of conservation concern, using generalized linear mixed models. We hypothesized that short dense grasses and leaf litter would be important for sedge wrens, and that tall seed-producing grasses would be important for the Henslow's sparrow. While survey year was a significant predictor for both species, sedge wren relative abundance increased with an increase in average grass cover ($\beta = 0.013 \pm 0.006$ SE) and a decrease in forb cover ($\beta = -0.024 \pm 0.011$ SE), while Henslow's sparrow relative abundance increased with increasing leaf litter ($\beta = 0.022 \pm 0.011$ SE) and grass cover ($\beta = 0.013 \pm 0.007$ SE). These results demonstrate positive responses by both species to prairie restoration. The strong effect of year indicates rapid sensitivity to vegetation changes, emphasizing the need for ongoing, long-term monitoring to evaluate restoration outcomes.

8. Surviving The Storm: Impacts of The Gulf Coast Blizzard on Overwintering Wilson's Snipe

Kevin Perozeni, Texas A&M University - College Station

Ashley Long, Texas A&M University - College Station

Abstract: Extreme weather events can profoundly affect migratory and resident wildlife by influencing survival, movements, and habitat use. For migratory shorebirds, short-term fluctuations in temperature and precipitation can inhibit fuel loading, impact stopover quality or locations, prolong migratory timing, or cause mortality. Wilson's snipe (*Gallinago delicata*; hereafter snipe) is a large migratory shorebird and game species that winters along the Gulf Coast. In early January 2025, we deployed GPS transmitters on 3 snipe in central Texas and 10 in Louisiana to study their movement ecology. However, when the first recorded blizzard on the U.S. Gulf Coast occurred between 20–22 January 2025, these tagged individuals provided a unique opportunity to examine the immediate effects of extreme winter weather on snipe. We observed no storm-related mortalities among Texas-tagged birds. In contrast, five Louisiana-tagged birds died during the event: three within 6–8 hours of the blizzard's onset and two more over the following two nights as temperatures remained between -16°C and -6°C . We tracked movements and behaviors of surviving snipe before, during, and after the storm and documented increased activity in response to snowfall and declining temperatures. Our results provide rare insights into how extreme winter weather affects shorebirds along the Gulf Coast. Further, our findings could help predict how snipe may respond to future environmental changes, informing management for this unique species.

9. Optimizing Acoustic Monitoring: Detection Distance Insights for Bird Surveys in South Texas

Kasey Pirkle, Texas A&M University - College Station

Alexander Hoxie, Texas A&M University - College Station

Andrea Montalvo, East Foundation

Ashley Long, Texas A&M University - College Station

Abstract: Autonomous recording units (ARUs) are widely used for avian monitoring. However, detection ranges of ARUs vary with environmental factors that affect sound propagation. Accounting for these factors is essential to avoid inadequate sampling design and misinterpretation of results. We evaluated how vegetation, weather, and data processing methods affect ARU detection distances for multiple bird species at two East Foundation ranches in South Texas. We sampled nine 400-m transects representing open, shrubby, and dense vegetation at each ranch, and replicated each transect twice. At each transect, we placed eight ARUs at 50-m intervals and played recordings of ~30 bird species with standardized amplitudes through a speaker at the 0-m point. We processed recordings in BirdNET at three confidence thresholds (0.5, 0.7, 0.9) and listened to recordings to create species-specific detection histories for each transect. Detection probability decreased with increasing distance across all vegetation classes, methods, and species. Manual review of recordings resulted in four times more detections than BirdNET at the lowest confidence threshold. Detection distances differed across species; observers had a 95% probability of detecting northern bobwhite (*Colinus virginianus*) from recordings at 200 m in open vegetation, but a 56% probability of detecting clay-colored sparrow (*Spizella pallida*). Detection probabilities decreased as wind speed increased for all species, methods, and vegetation classes. Our results provide species-specific detection thresholds that could help optimize ARU placement, sampling effort, and data processing in south Texas, and reiterate the importance of accounting for environmental and methodological factors when designing acoustic surveys for birds.

10. Tiny Plastics, Hidden Pathways: Investigating Exposure and Ingestion in Songbird Nestlings

Gracie Triplett, Tarleton State University

Lindsey Willingham, Tarleton State University

Alexander Hoxie, Texas A&M University - College Station

Addison Singleton, Tarleton State University

Rajani Srinivasan, Tarleton State University

Britt Heidinger, North Dakota State University

Adam Mitchell, Tarleton State University

Heather Mathewson, Tarleton State University

Abstract: Plastic pollution poses a global threat to wildlife species due to its environmental persistence and ability to degrade into smaller fragments called microplastics (MPs; ≤ 5 mm in size), which can be easily ingested by organisms causing physiological harm and impacting survival. MPs have been detected in many terrestrial bird species, yet their prevalence and sources of ingestion are not understood. To investigate MP exposure, we use an established house sparrow (*Passer domesticus*) breeding colony at the Southwest Regional Dairy Center in Stephenville, TX where in 2023 and 2024 we found 74% ($n = 231$) of nestling fecal samples contained MPs. Nestlings are confined within nest boxes; thus, we assume only two possible MP sources: ingestion of anthropogenic nest material and arthropods provisioned by parents. We aim to identify the primary exposure pathway in nestlings at our study site. In 2025, we collected nestling fecal samples, anthropogenic nest materials, and arthropods common in nestling diet. We chemically digested fecal and arthropod samples and categorized MPs by type, color, and size under a stereomicroscope. We then compared MP characteristics in nestling feces to those found in arthropods and nest materials. Preliminary results show that MPs found in the nestling fecal samples are most similar to local arthropod samples ($n = 85$) based on type and color. This suggests that parental food provisioning of arthropods is the primary source of MP ingestion. These results allow us to provide recommendations for targeting sources of pollution to reduce nestling exposure risk.

11. Spatial Distribution of Sympatric Owl Species in South Texas

Claire Molina, Texas A&M University - College Station

Andrea Montalvo, East Foundation

Lindsay Martinez, East Foundation

Jane Kunberger, Texas A&M University - College Station

Ashley Long, Texas A&M University - College Station

Abstract: Species distribution models (SDMs), which predict species' occurrence based on environmental variables, are widely used to guide rare species surveys and inform conservation planning. However, traditional SDMs often assume species respond independently to environmental conditions, overlooking biotic interactions and shared habitat preferences. For co-occurring species that compete for resources or exhibit niche partitioning, these interactions can significantly shape realized distributions, highlighting the need to incorporate them into SDMs. Our objectives are to (1) quantify spatial overlap among three sympatric owl species in South Texas—Great Horned Owl (*Bubo virginianus*, GHOW), Eastern Screech Owl (*Megascops asio*, EASO), and the federally threatened Cactus Ferruginous Pygmy-Owl (*Glaucidium brasilianum cactorum*, CFPO)—and (2) compare predictive performance of models that account for co-occurrence and potential biotic interactions against traditional single-species SDMs. In October 2025, we conducted preliminary surveys at four working ranches to characterize owl habitat associations and inform future sampling. We recorded 62 owls and calculated land-cover composition within 1 km of each detection. CFPO and EASO were relatively localized, using similar and less variable proportions of woodland and grassland vegetation than GHOW, which occurred across a broader range of land cover types. From January to May and October 2026 and 2027, we will conduct playback surveys for all three species and acoustic monitoring paired with field-based and remotely sensed vegetation data to develop joint SDMs. These models will provide insights into community-level habitat requirements and inform conservation strategies for co-occurring raptors in working landscapes where management decisions affect multiple species simultaneously.

12. Comparing Estimated Avian Species Richness Between Point Counts and Autonomous Recording Units

Alexander Hoxie, Texas A&M University - College Station

Jane Kunberger, Texas A&M University - College Station

Andrea Montalvo, East Foundation

Michael Morrison, NA

Ashley Long, Texas A&M University - College Station

Abstract: Long-term avian monitoring is essential for tracking population trends and understanding species-specific responses to changes in land use and land management practices. Point counts (PCs) are widely used for these purposes, but autonomous recording units (ARUs) offer continuous, standardized sampling and are increasingly incorporated into monitoring programs to overcome limitations of observer-based surveys. ARUs enable extended sampling periods, reduce observer bias, and allow monitoring in remote areas, making them a promising complement or alternative to PCs. However, few studies have evaluated how species richness varies between these methods at different spatial scales. We compared avian species richness estimates from long-term 10-min PCs (June 2018–2023), ARUs (June 2025), and PCs at ARU points (June 2025) at East Foundation’s San Antonio Viejo Ranch in Texas. We processed acoustic data using BirdNET and manually verified species identifications. ARUs detected 1.5–2.2 times more species per point than PCs, even when PCs were aggregated across years. At the plot scale, ARUs detected nearly twice as many species as 2025 PCs but slightly fewer than multi-year PCs. Our results demonstrated that ARUs can capture more species with less field effort, but PCs remain important for detecting non-vocal species. Integrating both methods can strengthen long-term monitoring programs by balancing efficiency with comprehensive species detection.

13. Optimizing Chemical Immobilization in Collared Peccary: Recovery Patterns and the Value of Supplemental Oxygen

Edward Tomassetti, Texas A&M University - College Station

Logan Thomas, Kansas State University

Walter Cook, Texas A&M University - College Station

Marcus Blum, Texas A&M University - College Station

Jacob Dykes, Mississippi State University

Whitney Gann, Texas Parks & Wildlife Department

Stephen Webb, Texas A&M Natural Resources Institute

Abstract: Chemical immobilization is a critical tool in wildlife research, allowing biologists to safely capture and handle animals that would otherwise be dangerous, difficult to restrain, or highly stressed by physical methods. Because capture and immobilization can influence animal physiology and behavior well beyond the handling period, refining protocols that promote rapid and stable recovery is essential. As part of an ongoing study, we have chemically immobilized 102 collared peccary (*Pecari tajacu*) in southern Texas. Individuals were immobilized via an intramuscular injection of butorphanol (10 mg/mL), midazolam (5 mg/mL), and xylazine (100 mg/mL). At the conclusion of each handling event, animals received an intramuscular injection of flumazenil (1.0 mL at 0.1 mg/mL), naltrexone (0.5 mL at 10 mg/mL), and atipamezole (0.7 mL at 50 mg/mL) to reverse immobilizing agents. We recorded the interval from antagonist administration to the time each animal stood as a measure of recovery. During our initial captures ($n = 88$), mean reversal-to-standing time was 8 minutes 56 seconds (SD = 9 minutes 31 seconds). Recovery responses were variable, with some individuals exhibiting prolonged ataxia. To mitigate post-reversal instability, supplemental oxygen (O₂) was incorporated into subsequent protocols. We reduced reversal-to-standing time down to 4 minutes 52 seconds (SD = 2 minutes 15 seconds) for peccary receiving supplemental O₂. Ongoing work will increase sample sizes and integrate GPS-derived movement data to quantify the most appropriate methods for immobilization, recovery, and safety. These findings highlight the potential benefits of supplemental O₂ when immobilizing collared peccary.

14. White-Tailed Deer Activity and Wildlife Community Diversity in Urban Park Ecosystems of South Texas

Cintya Medina Rangel, Texas A&M International University

Karla Pedraza, Texas A&M International University

Alexandra Ash, Texas A&M International University

Israel Adame, Texas A&M International University

Vijayan Sundararaj, Texas A&M International University

Abstract: Urbanization creates fragmented landscapes that alter species interactions, wildlife behavior, and the quality of habitats. To better understand how these processes operate within a rapidly growing South Texas city, we conducted a trail-camera study across five urban parks in Laredo—North Central Park, Shiloh Bike Trail Parks, Father McNaboe Park, and two additional green spaces—to document wildlife presence, temporal activity patterns, and behavioral responses to habitat characteristics. Trail cameras were deployed using standardized protocols to record presence–absence, foraging behavior, and risk-related responses. Landscape variables, including canopy cover, vegetation density, and surrounding urban infrastructure, were derived through supervised classification in ArcGIS Pro. Integrating these spatial metrics with camera detections allowed us to evaluate how habitat layout and local vegetation structure influence wildlife use within each park. White-tailed deer (*Odocoileus virginianus*) were consistently detected at North Central Park and Shiloh Bike Trails, showing limited daytime activity and behaviors indicative of risk-sensitive foraging. Cameras also recorded coyotes, gray foxes, raccoons, armadillos, and a diverse assemblage of bird species, reflecting notable biodiversity despite extensive urban development. Species detections varied across parks, suggesting that differences in vegetation structure, patch size, and proximity to human activity influence wildlife behavior and habitat use. Our findings suggest that urban parks serve as crucial habitat patches, capable of supporting diverse wildlife communities, even within highly modified landscapes. By combining fine-scale behavioral observations with landscape-level spatial analysis, this study provides practical insights for urban wildlife management and supports conservation-oriented planning in rapidly expanding South Texas municipalities.

15. Initial Results of Avian Surveys on a Sustainably-Managed, Working Ranch in North Texas

Callie Cartwright, Texas Tech University
Warren Conway, Texas Tech University
Sharon Valverde, Texas Tech University
Courtney Ramsey, Texas Tech University

Abstract: Urban-wildland interfaces are becoming more complex, particularly in the Dallas-Fort Worth metroplex, where nearly 1/3 of the Texas population is located. We performed bird surveys on a ~600 ha private ranch in Hood County, a region that has experienced a nearly 30% human population increase in the last 5 years. Within the context of this growing urbanization, this ranch serves as a restored remnant and will be maintained in perpetuity as a working ranch and regional conservation model. While anecdotal species occurrence data exists, no structured surveys have been previously performed. We conducted bird surveys throughout the property from 20 June to 15 August 2025 using 94 sampling points, each surveyed 2-3 times. We performed 10-minute surveys using Merlin Bird ID within 4 hours following sunrise within six dominant cover types (riparian, native prairie, mixed prairie, improved pasture, oak woodland, and cedar woodland) on the ranch. We detected 78 bird species, nine of which are Species of Greatest Conservation Need (SGCN) in Texas, including Northern bobwhite (*Colinus virginianus*) and grasshopper sparrow (*Ammodramus savannarum*). We calculated Simpson's Diversity Indices, which were similar among cover types (0.946-0.960), and avian species richness ranged from 21 to 63, depending upon cover type. These surveys provide the first formal data for this ranch, and will serve as a baseline for long-term monitoring efforts to evaluate the effects of sustainable land management on native species in rapidly urbanizing portions of Texas.

16. Urban Stream Habitat Assessment and Restoration Implications for Wildlife in The Boggy Creek Watershed

Alannah Roberts, Texas A&M University - College Station

Sara Moren, HDR Engineering, Inc.

Beth Silvy, Texas A&M University - College Station

Roel Lopez, Texas A&M University Natural Resources Institute

Abstract: Urban streams in rapidly developing watersheds often experience channel incision, erosion, and degraded ecological function, which increases flood risk and threatens adjacent residential and wastewater infrastructure. To address these concerns, HDR, on behalf of Austin Watershed Protection, initiated an environmental study to support development of a risk reduction and stream stabilization project along Clarkson Tributary; a stream within Boggy Creek watershed in central Austin. The objective was to evaluate ecological conditions, regulatory constraints, and habitat considerations that influence restoration design and permitting needs. A desktop review and field assessments were conducted from June to August 2025 to delineate waters of the U.S., evaluate ecological conditions using the Texas Rapid Assessment Method (TXRAM), identify protected species habitat, verify prior tree surveys, assess critical environmental features, and determine permitting requirements. Two potentially jurisdictional streams were identified, and one critical environmental feature was confirmed. TXRAM scores across five stream assessment reaches indicate impaired riparian buffer conditions and variable channel and in-stream conditions. Invasive vegetation was widespread, with dense monocultures dominating several reaches. Suitable habitat for the proposed endangered tricolored bat (*Perimyotis subflavus*) and the proposed threatened monarch butterfly (*Danaus plexippus*) was present. These findings provide the ecological baseline needed to balance flood-risk reduction and ecological restoration. Restorative efforts may include opportunities to reconnect the channel to its floodplain, enhance riparian canopy cover, remove invasive species, augment coarse sediment for aquatic macroinvertebrates, and implement native vegetation plantings to support long-term stream stability, habitat quality, provide community access, and improve habitat for urban wildlife species.

17. Evaluating Remote Sensing Platforms for Wildfire Burn Severity in Semi-Arid Grasslands: The 2024 Texas Panhandle Fires

Valeria Enciso, Texas A&M Agrilife Extension

Conner Ties, Texas A&M University - College Station

Humberto Perotto, Texas A&M University

Morgan Treadwell, Texas A&M Agrilife Extension

Riley Alvarez, Texas A&M University - College Station

Xavius Ortiz, Texas A&M University - College Station

Abstract: In February 2024, the Texas Panhandle underwent a series of four major wildfires that burnt more than half a million hectares. The most devastating being the Smokehouse Creek wildfire consuming nearly 428,000 hectares marking it the largest wildfire in Texas recorded history. Despite the \$123 million in agricultural damage and additional \$68.7 million of infrastructure loss, fire remains a key ecological driver in shaping the rangelands of the Texas Panhandle, affecting habitat structure and vegetation communities across the region. However, recovery of plant communities in the Texas Panhandle remains unknown post-wildfire. Satellite based remote sensing has seen significant progress in the past decades allowing for more in-depth spatial analysis of burn patterns at high resolutions within areas impacted by wildfires. The objective of this study is to determine which remote sensing platform offers the highest frequency of effectively accurate assessments on burn severity and vegetation recovery in the rangelands of the Texas Panhandle. First, we will evaluate burn severity and vegetation recovery metrics across three remote sensing platforms varying in spatial resolutions. We then compared imagery from SuperDove (8 spectral bands; 3 m spatial resolution; daily), Sentinel-2 (13 bands; 20 m spatial resolution; 5-day revisit), and Landsat 9 (11 bands; 30 m spatial resolution; 16-day revisit) platforms to evaluate how spectral, spatial, and temporal resolution influence wildfire assessment in semi-arid grasslands. Our goal is to identify the optimal combination of resolution, scale and platform for rangeland focused wildfire research.

18. Preliminary Findings on Habitat Preferences of Davis Mountain Cottontails (*S. Holzneri Robustus*)

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

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

Alynn Martin, Caesar Kleberg Wildlife Research Institute

Dana Karelus, Texas Parks & Wildlife Department

Abstract: Little is known about habitat requirements of Davis Mountain cottontail rabbits (DMCR; *Sylvilagus holzneri robustus*); however, they are assumed to be montane specialists. DMCR have been documented to use dense thickets of evergreen woody plants and rocky crevices as refugia. Our objective was to determine habitat use of DMCR in the Davis Mountains region of Texas. We conducted vegetation sampling during May-August 2025 at visually-observed rabbit points and randomly-located points within the same area. A GPS-collared female DMCR had an estimated home range of 1.6 ha. Preliminary woody plant data indicate that catclaw mimosa (*Mimosa aculeaticarpa*) and prickly pear (*Opuntia* sp.) were found at 8.3% and 12.5%, respectively, of the points where DCMR were observed during the dry-to-wet intermediate season (May-June). To evaluate herbaceous plant usage, woody species were filtered from the dataset. For herbaceous plant usage, preliminary plant data indicate that during the dry-to-wet intermediate season, DMCR were always associated with sand dropseed (*Sporobolus cryptandrus*); however, during the wet season (July – September), they used a wider variety of species, with Grama varieties (*Bouteloua* spp.) making up about 40% of usage, and sand dropseed was not used. Rabbits were seen in areas with plant ground cover during the dry-to-wet intermediate season. However, during the wet season when herbaceous plants were more productive, rabbits were associated with bare and rocky ground cover. This preliminary observation may be due to seasonal differences in availability of escape cover; availability will be accounted for in future analyses.

19. Evaluating Ground-Dwelling Arthropod Interactions Following Plant Invasion in a New England Maritime Grassland

Tyler McMahon, Tarleton State University

Jake Davis, Tarleton State University

Heather Mathewson, Tarleton State University

Adam Mitchell, Tarleton State University

Abstract: North American grassland ecosystems have undergone significant fragmentation due to anthropogenic stressors such as biological invasions. In particular, maritime grassland ecosystems are susceptible to plant invasion after disturbance, while being encroached by coastline and forest ecosystems. Understanding changes in biodiversity and community structure following plant invasion and management in grasslands will elucidate the efficacy of restoration success. Our study aims to quantify the impact of plant invasions on ground-dwelling arthropod communities and their effects on the functional groups associated with a maritime grassland in the Long Island Sound (Fishers Island, New York). [MDA1] I replicated methodology based on surveys from 2014-2016 to measure vegetation and arthropod characteristics and to compare alpha richness, relative abundance, Shannon-Wiener (H') diversity index, and beta diversity across gradients of plant invasion: 0%, 25%, 50%, 75%, and 100% using pitfall traps for specimen collection. The functional groups of arthropods were also determined from the samples and grouped into decomposers, predators, pollinators, parasitoids, frugivores, or detritivores, and analyzed using NMDS. Overall, alpha diversity was consistent across all invasive gradients, and high beta diversity rates were observed between all groups. Our [MDA2] 2024 results show that there is no difference in the abundance of arthropods between invaded and native vegetation. Of the six tested functional groups, there was a positive correlation between herbivores and invasive percent cover, and parasitoids and native percent cover. These findings support the need for invasive plant control within maritime grasslands to conserve and protect functional groups, especially with specialized herbivores and parasitoids.

20. The Effects of Urbanization on Post-Breeding Movement of White-Winged Doves

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Abstract: The white-winged dove (*Zenaida asiatica*), a migratory gamebird historically confined to the Lower Rio Grande Valley (LRGV) of Texas, has undergone a dramatic northward range expansion over the past fifty years. Over the same period doves have increasingly selected urban environments for nesting. Previous studies indicate that urban doves have become partially migratory, with a portion remaining resident year-round rather than undertaking seasonal migrations. However, the proportion of non-migratory individuals and the factors influencing their post-breeding movement patterns remain unknown. Thus, the objective of this study is to investigate the effects of urbanization on post-breeding movement decisions of white-winged doves. We predict that individuals captured in urban areas will be less likely to migrate and exhibit more variable dispersal patterns than their rural counterparts. To address our research goals, we fitted 76 doves with GPS telemetry devices between June-August, 2025 across urban-rural gradients in San Antonio and Houston and at traditional breeding sites in the LRGV. Preliminary telemetry data collected through November 2025 suggest individual variation in post-breeding movements, as seven individuals initiated migration to southern Mexico, while others remain near their capture locations. Individuals remaining close to capture sites exhibit significant variation in dispersal distance and direction. These early results reveal variation in movement among individuals, but additional data are needed to address urbanization effects. Understanding the impacts of urbanization on white-winged doves post-breeding movement will serve to inform management plans for this gamebird in Texas and surrounding states while simultaneously providing insight into adaptations of wildlife to urbanization.

21. Functional Community Responses to Extreme Weather Events Using a Long-Term Dataset

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Charles Thompson, Texas A&M University - Kingsville

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Zachary Mitchell, Texas A&M University - Kingsville

Abstract: Extreme weather events are increasingly influential drivers of ecological change, altering biotic systems from individuals to entire communities. In coastal environments, hurricanes can rapidly shift salinity, temperature, turbidity, and habitat structure, potentially reorganizing communities. Research on hurricane impacts in ecological communities frequently centers on taxonomic patterns, leaving the functional trait processes that drive resistance and recovery underexplored. Using decades (1980-2024) of monthly coastal fish surveys, we paired species abundances with a trait database to derive functional diversity metrics (e.g., FRic, RaoQ) and community-weighted means. Hurricanes (Category ≥ 1) were aligned to landfall and partitioned into temporal phases (pre; immediate, 0–3 mo; early, 4–12; mid, 13–24; late, 25–36). A bay-level exposure index combined storm intensity (maximum sustained winds and minimum pressure) and distance to landfall. We then tested for immediate and long-term shifts using interrupted time-series and phased event-study models that account for seasonality and within-bay autocorrelation. Preliminary patterns indicate strong seasonality, occasional immediate declines in RaoQ (short-lived functional compression), mixed FRic responses in the following year, weak or inconsistent exposure dependence, and generally rapid recovery (often within 4–12 months). Overall, despite some storm- and bay-specific differences, nearshore fish assemblages on the Texas coast appear to exhibit high resistance to hurricane disturbance and high resilience in functional structure, with trait space typically re-occupying after landfall. Functional trait metrics provide a scalable, cross-ecosystem toolkit for diagnosing disturbance impacts and forecasting recovery in both aquatic and terrestrial assemblages.

22. Drought Impact Assessment on Freshwater Communities: Responses of South Texas Crayfish

Zoe Mabry, Texas A&M University - Kingsville

Abstract: Severe climatic events, especially prolonged droughts, are documented to be major drivers of ecological changes in freshwater ecosystems. Reduced surface water, habitat fragmentation, and declining water quality intensify thermal stress, competition, and predation, often leading to localized extinctions and disruptions to nutrient cycling and food-web stability. Crayfish, which serve as a keystone species, are particularly vulnerable due to their reliance on moist conditions for respiration, limited dispersal under drying events, and sensitivity to hydrological isolation. Thus, their behavioral and physiological responses make them strong indicators of drought impacts. Many South Texas endemic crayfish are at risk from habitat loss, altered flow regimes, and invasive competitors. This research investigates how drought severity influences crayfish population dynamics, habitat suitability, and resulting behavioral strategies across South Texas watersheds. Working with six native crayfish species, the study integrates field surveys, mesocosm experiment, and ecological niche modeling. Field surveys will document distribution patterns, habitat associations, and demographic indicators, while mesocosm trials will quantify behavioral and survival responses of native species in comparison to invasives, like *Procambarus clarkii*. Niche models will generate high-resolution habitat suitability maps to forecast range shifts under heightened drought frequency. Together, these results will identify indicators of vulnerability, providing actionable guidance for conservation planning, drought contingency strategies, and species status assessments.

23. Efficacy Of Managing Invasive Japanese Knotweed on Arthropod Biodiversity in a Maritime Grassland

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Adam Mitchell, Tarleton State University

Heather Mathewson, Tarleton State University

Abstract: Arthropod biodiversity is declining in North America, particularly in New England due to factors such as urbanization, agriculture, and biological invasions. Japanese knotweed (*Reynoutria japonica*) is an invasive plant in New England that displaces native vegetation, reduces habitat complexity, and alters litter biomass, which could contribute to arthropod decline. Repeated mowing is recommended as one management strategy to reduce presence of knotweed. Our study investigates the effects of mowing on knotweed growth and arthropod community structure in a maritime grassland on Fishers Island, New York. From June through August 2025, we sampled nine sites varying in knotweed density, height, and spatial coverage before mowing and 30 days afterwards. We collected arthropods using pitfall traps and vacuum sampling, then identified arthropods to family. We used rarefaction analyses to compare pre- and post-mowing diversity, while alpha and beta diversity metrics further characterized community composition. Mowed areas had lower family richness than before the areas were mowed, but mowed areas had higher alpha diversity and greater species evenness, with nestedness being the largest component. Although mowing lowers overall family richness, our findings suggest mowing as an effective management strategy to improve plant heterogeneity with concomitant effects for arthropods. By examining changes in arthropod communities following knotweed management, our findings provide insight into how shifts in arthropod diversity and availability following biological invasion can affect organisms at higher trophic levels, such as birds, bats, herpetofauna, and small mammals, that depend on arthropods for foraging resources, ecosystem functions, and overall habitat quality.

24. Temporal Partitioning of Supplemental Resources Use Between Native and Invasive Ungulates in West Texas

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Gabriel Andrade-Ponce, Stephen F. Austin State University

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Jessica Glasscock, Stephen F. Austin State University

Abstract: The introduction of invasive species often leads to overlap with native species that occupy similar ecological niches. Such overlap may result in exploitative competition, possibly compromising native species populations and influencing behavior. In this study, we examined temporal partitioning of supplemental forage resources among two invasive ungulates, axis deer (*Axis axis*) and aoudad sheep (*Ammotragus lervia*), and the native white-tailed deer (*Odocoileus virginianus*) within the Edward's Plateau ecoregion of Texas. We deployed three camera traps from January through March 2024 to assess temporal patterns of supplemental feeder use on the Glasscock Ranch. We evaluated visitation rates by diel period and duration of visits using a generalized linear model and a Cox proportional hazards mixed-effects model. The diel period visitation rate of feeders varied within species, with white-tailed deer being detected more frequently in mornings than afternoons, ($p=0.034$), while aoudad increased during afternoon hours compared to evenings ($p=0.045$). Comparisons were made between species as well, with white-tailed deer in mornings and evenings having significantly more detections than axis ($p = 0.008$, $p=0.015$) and aoudad ($p=0.001$, $p=0.002$) respectively. Visitation duration also varied, as aoudad remained at feeders for longer ($p=0.002$), whereas axis had shorter visitations ($p=0.002$) compared to white-tailed deer. Axis visitation duration increased as the study progressed ($p=0.027$). These patterns suggest that although spatial overlap occurs at feeders, temporal partitioning reduces direct competition but may not eliminate potential impacts on native species. If supplemental resources are intended to benefit white-tailed deer, active management of exotic ungulate populations may be necessary.

25. Novel Drivers Of Nest-Site Selection in Texas Horned Lizards

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Julianne Li, Fort Worth Zoo

Brian Wright, White Ranch

Dean Williams, Texas Christian University

Abstract: Both nest environment and post-emergence resource availability shape reproductive success in oviparous reptiles. While the abiotic conditions of a reptile's nest can greatly influence hatching success, post-emergence resource availability affects hatchling survival and growth. Many studies evaluate whether females favor nesting sites based on abiotic conditions; however, no studies have linked nest-site choice with post-emergence resource availability. Understanding this relationship could improve habitat management and enhance survival in Texas horned lizard (*Phrynosoma cornutum*) reintroduction programs. The species' strong dietary specialization, particularly the reliance of hatchlings on small native ants (*Crematogaster*, *Dorymyrmex*, *Pheidole*, and *Tetramorium* spp.), allows testing of whether females select nest sites that maximize post-emergence prey availability. During the summers of 2023 and 2024, we located 21 nests of Texas horned lizards at a reintroduction site at Mason Mountain WMA and at a natural population (~42 km away) in central Texas. We compared nest and random sites to assess a female's ability to select a nest site based on fire ant abundance, native ant abundance, soil moisture, soil compaction, and vegetation structure. Using stepwise model selection, results suggest that horned lizards select nest sites with low soil compaction, reduced grass cover, and high hatchling prey abundance. This information will be used to determine whether suitable nesting areas exist at reintroduction sites and to determine how best to manage land for optimal horned lizard survival. Release sites with softer soil, less grass, and a higher abundance of native ants should be prioritized.

26. What's on the Menu? GPS-Video Collars Provide Insight into the Diet of Desert Bighorn Sheep

Lauren Duncan, Texas A&M University - College Station

Tyler Hutchinson, Texas A&M University Student Chapter of The Wildlife Society

Dylan Stewart, Texas A&M University - College Station

E. Alejandro Lozano-Cavazos, Universidad Autónoma Agraria Antonio Narro

Stephen Webb, Texas A&M Natural Resources Institute

Abstract: Desert bighorn sheep (*Ovis canadensis mexicana*) live in seasonally variable environments characterized by prolonged drought and extreme summer temperatures that affect forage quality and availability. These seasonal shifts in plant communities directly affect nutritional needs. To better understand seasonal diet use, we captured and fitted 9 desert bighorn sheep (5 F; 4 M) with GPS-video collars, which were translocated to supplement a free-ranging population near Caborca, Sonora, Mexico. The collars collected GPS coordinates and 3, 15-second video clips per day (morning [0800 MST], midday [1300 MST], evening [1700 MST]). To date, we have reviewed video footage of 1 male and 1 female collected during January–February 2023 (winter); we will continue to review all data from the winter and then shift to reviewing video footage during the summer. We broadly classified plants into 7 groups: cacti, shrubs, grass, forbs, lichen, soil, and unknown. The most common plants that desert bighorn sheep consumed, in descending order, were shrubs (44.5%), grass (34.9%), forbs (12.6%), and cacti (2.9%). Leaves (29.8%) and woody tips (13.0%) were the most common plant parts that were foraged on in shrubs. We predict that declining plant quality and quantity, coupled with increased water demands, during summer will drive shifts in forage use. Specifically, we predict increased consumption of cacti during summer to supplement water intake. The integration of GPS-video collars with physiological and environmental variables will provide unique insights into the foraging behavior of desert bighorn sheep.

27. Projected Distribution of the Common Warthog (*Phacochoerus Africanus*) and Implications for African Swine Fever in North America

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Abstract: Common warthogs (*Phacochoerus africanus*) are a recently introduced species that have apparently established self-sustaining populations in south Texas. This species can serve as an asymptomatic carrier of African Swine Fever virus (ASFv), a re-emerging global swine disease that has not yet been detected in the United States or Mexico but which could cause substantial economic damage if it is found. Consequently, there is an urgent need to understand the potential distribution of common warthogs in these two countries for monitoring and management. To evaluate where this species might eventually spread, we developed ecological niche models using Maxent and AICc-based variable selection from occurrences within the native range. The AICc-selected model determined precipitation of the wettest quarter, temperature seasonality, terrestrial evapotranspiration, and road density were the most important variables determining the fundamental niche. When projected to North America, the model identified central and southern Mexico as the largest region with high suitability, with additional pockets in southern Texas, Florida, and along the western coast of the United States. These projections provide insight into where early detection of warthog establishment may be most effective and where transboundary dynamics with Mexico justifies monitoring; however, high environmental suitability does not inherently translate to ASFv hazards. Areas lacking vectors such as soft ticks (e.g., *Ornithodoros* spp.) or with low densities of other suids may pose little risk to the transmission of ASFv from warthogs to other species, whereas moderate-suitability regions containing both ticks and warthogs may represent higher-risk areas for ASFv transmission.

28. Influence of Vegetation Characteristics on Wildlife Species Richness and Occurrence in a Natural Area in Texas

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Humberto Perotto-Baldivieso, Texas A&M University - College Station

Ashley Long, Texas A&M University - College Station

Ty Werdel, Texas A&M University - College Station

Abstract: Natural areas in an urban and agriculture production matrix serve as important wildlife habitats. Their vegetation communities often exhibit diverse structures that support birds and terrestrial mammals year-round. Our objective is to quantify the influence of vegetation characteristics on wildlife species richness and occupancy. We will conduct our research from spring 2026 to spring 2028 at the Ecology & Natural Resource Teaching Area (ENRTA). This property is located within the greater Bryan-College Station area in Brazos County, Texas. We will place a 500-m grid of sampling locations across ENRTA, covering a variety of vegetation communities. At each sampling location, we will conduct year-round monitoring of mammals using trail cameras and spring monitoring of birds using passive acoustic recorders. We will also use remotely sensed imagery to quantify the vegetation characteristics across ENRTA. We will then examine relationships between vegetation structure and the wildlife we observe. Our results will provide land managers with data-driven insights to guide habitat management practices—including mechanical, chemical or prescribed fire treatments—aimed at enhancing vegetation and wildlife diversity.

29. Seeing Is Believing! Use Of GPS-Video Collars to Quantify Activity Budgets of Desert Bighorn Sheep

Tyler Hutchinson, Texas A&M University Student Chapter of The Wildlife Society

Lauren Duncan, Texas A&M University - College Station

Dylan Stewart, Texas A&M University - College Station

E. Alejandro Lozano-Cavazos, Universidad Autónoma Agraria Antonio Narro

Stephen Webb, Texas A&M Natural Resources Institute

Abstract: Desert bighorn sheep (*Ovis canadensis mexicana*) inhabit hot, arid environments, where their behavior is largely influenced by thermoregulation and nutritional demands. To better understand these behaviors, we captured and fitted 9 desert bighorn sheep (5 F; 4 M) with GPS collars, integrated with video capabilities, and translocated them in December 2022 to supplement a free-ranging population near Caborca, Sonora, Mexico. The collars collected GPS coordinates, temperature, and 3, 15-second videos during the morning (0800 MST), midday (1300 MST), and evening (1700 MST), daily. To date, we have reviewed video footage from 2 individuals, one male and one female, collected during January and February 2023. We quantified the frequency of behaviors observed, which we classified as chewing, foraging, bedding, standing, running, and walking. We observed that the male engaged in standing behavior 42% of the time followed by bedded (20.4%), foraging (17.2%), chewing (12.2%), and walking (7.6%) behaviors. The female engaged in standing 63.4% of the time followed by foraging (19%), chewing (8.6%), walking (8.4%) and bedded (0.6%). We predict that activity budgets will shift during the summer, as sheep select cooler microclimates and water consumption increases to meet thermoregulation demands. Preliminary review of video footage during the summer indicates frequent use of caves where sheep remain bedded during midday. These results can be used to model energy expenditure and assess stress from environmental extremes.

30. Wildlife Damage at Livestock Guardian Dog Feeding Stations: Effective Strategies to Reduce Food Loss

Grant Rogers, Texas A&M AgriLife Research
Andrew Kasner, Texas A&M AgriLife Research

Abstract: A major challenge of managing livestock guardian dogs on rangelands is dog food theft by wildlife, resulting in higher costs of maintaining dogs. Our objectives were to quantify loss of dog food to wildlife at an Edwards Plateau, Texas ranch, and to test the efficacy of different methods to reduce non-target consumption of dog food. We compared number of raven and mammal photos inside dog feeding stations before and after treatments (effigies, covering feeders with a tarp, and addition of a wire-mesh floor). We recorded 195,003 photos at 7 different feeders from 21 March to 19 November 2025. Non-target animals (striped skunk [*Mephitis mephitis*], Common Raven [*Corvus corax*], raccoon [*Procyon lotor*] and hog-nosed skunk [*Conepatus leuconotus*]) consumed high quantities of dog food with only a small proportion attributable to dogs. Effigies deterred ravens at one location (mean \pm SE number of raven photos per day before: 219 \pm 29; after: 0.5 \pm 0.4) but were ineffective at a second location. Covering the feeder cage with a tarp effectively reduced raven visitation, with zero ravens detected at tarped feeders during 56 trap days compared to 207 \pm 22 photos/day during 56 trap days before tarp. However, at one location in August and September, ravens were undeterred from eating at a tarped feeder for 16 days (111 \pm 22 photos/day). Tarps did not discourage dogs or mesocarnivores from eating at the feeder. The addition of a wire mesh floor to a feeder significantly reduced striped skunk detections ($P < 0.05$) but had no effect on hog-nosed skunk detections.

31. Comparing Small Fauna Communities Between Agrivoltaic Systems and Native Grasslands

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Abstract: Texas is the national leader in utility-scale solar energy production, hosting 209 facilities spanning ~64,750 hectares, with additional development anticipated. Because new solar facilities often replace native grasslands, their ecological effects—particularly on small-fauna richness—remain poorly understood. The objective of the study was to assess how an agrivoltaic system may support small-fauna richness at the Brightside Solar Facility in Live Oak County, Texas. The chain-linked high-fenced facility, constructed in 2021, was re-seeded with ~20 native plant species, using Dorper sheep (*Ovis aries*) as a vegetation management strategy to maintain vegetation height. In November 2024, we deployed 16 camera traps for three weeks across 8 sites within 3 treatments: 3 sites in the North (6 cameras), 3 sites in the South (6 cameras), and 2 sites in the undisturbed native grassland (4 cameras). Cameras detected 8 wildlife species from 63,091 photos, with richness per camera lower in grazed areas (0-3 species) and slightly more variable in undisturbed native grassland (0-6 species). However, richness did not differ significantly among areas ($P = 0.45$). Collectively, these findings indicate that the Brightside Solar Facility primarily supported disturbance-tolerant generalists such as the eastern cottontail (*Sylvilagus floridanus*) and the black-tailed jackrabbit (*Lepus californicus*). At the same time, disturbance-sensitive species were associated with the adjacent undisturbed native grassland. In a high-fenced agrivoltaic system, wildlife communities reflect only onsite habitat conditions, suggesting that a chain-link high fence may limit the diversity of sensitive small fauna. These results offer insight for solar farm managers aiming to balance energy production with ecological outcomes.

32. Assessing the Status of Owl Populations in Texas

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Andrew Gregory,

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Abstract: Habitat fragmentation and loss due to land use change is negatively impacting bird populations. As urban landscapes chip away at eco-regions, raptors may be more susceptible to these land use changes, as they require larger, more niche habitats, and rely heavily on stable prey populations. We examined population trends of six owl species found in Texas, American Barn Owl (*Tyto Furcata*), Barred Owl (*Strix varia*), Great-horned Owl (*Bubo virginianus*), Burrowing Owl (*Athene cunicularia*), Eastern-screech Owl (*Megascops asio*), and Elf Owl (*Micrathene whitneyi*) using 24 years of Breeding Bird Survey (BBS) count data. We fitted a log-normal state space model (SSM) to six different count matrices to examine changes in population stability. We found Texas owl populations have remained relatively stable, despite significant urban conversions since the 1990's, with population growth rates (λ) for each species approximately equal to 1. However, plots of average abundance per year show subtle changes in population trends, with Elf and Eastern-screech Owls becoming vulnerable to population declines, while Burrowing Owls have experienced recent population increases. Though Owl populations in Texas are not yet suffering due to habitat loss, periodic monitoring should continue so as to ensure the persistence of these species.

33. Resolving the Phylogenetic Status of Salamanders with Markedly Different Responses to Supersaturation

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Trent Furr, University of Texas at Tyler

Ryan Shartau, Washington State University

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Abstract: Endangered Barton Springs Salamanders (*Eurycea sosorum*) encounter supersaturation, which is an excess of dissolved gas, in their habitat which can lead to gas bubble disease and potentially death. A recent master's thesis studied gas bubble trauma in a surrogate species, the Fern Bank Salamander (*Eurycea pterophilia*). The Fern Bank Salamander is morphologically and genetically similar to the Barton Springs Salamander and they both occupy similar habitats. Following exposure of gas supersaturation conditions (120%), it was found that some Fern Bank Salamander individuals perished while others survived. This study tests the hypothesis that there is a phylogenetic basis for this mortal phenotypic response to supersaturation. Six total tail samples of Fern Bank Salamanders (three mortalities and three survivors) were preserved for DNA extraction. Following DNA extraction, DNA samples were sent to Azenta for low-coverage genome sequencing. The sequencing data was used to assemble the mitochondrial genome of these six individuals. We focused on two mitochondrial genes for phylogenetic analyses (ND2 and cytB) due to there being a large database of individuals (112 individuals from 71 different caves and springs) from six *Eurycea* species including Barton Springs Salamanders and Fern Bank Salamanders. Phylogenetic analyses will be performed using Maximum Likelihood to determine if *Eurycea pterophilia* may have undergone sympatric speciation due to environmental pressures related to supersaturation.

34. Evaluating Biomass Recovery Post Large-Scale Wildfire in the Texas Panhandle: A Tale of Two Fires

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Morgan Treadwell, Texas A&M Agrilife Extension

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Abstract: Over the past two decades the Texas Panhandle has experienced five large-scale wildfires that burned over one million hectares. The largest of these fires and the largest wildfire in Texas recorded history, the Smokehouse Creek wildfire, occurred in February of 2024 and burned ~428,000 hectares of land. The East Amarillo Complex wildfire was the 2nd largest of these Panhandle wildfires and the 2nd largest in Texas recorded history, burning 367,000 hectares in March of 2006. Although these two fires occurred 18 years apart, they were similar in spatial extent and seasonal timing, as both fires burned large areas of the Panhandle and occurred during the dry dormant season. This resulted in around half of the East Amarillo Complex occurring through the same spatial extent as the Smokehouse Creek wildfire. The related aspects of the fires promotes the idea of a systematic pattern and highlights the effects of dry biomass and fuel loads. Given the extent and frequency of these wildfires, our analysis will determine biomass recovery post fire to find trends in their rate of recovery and evaluate the extent of vegetation regrowth in both individual fires and in areas of overlap. To conduct these analyses we will use the Rangeland Analysis Platform (RAP) to analyze the biomass recovery of 4 different ranches found in the Panhandle using its 16-day biomass data, then use fine-scale drone imagery to validate these findings. These findings will increase understanding of the temporal aspect of vegetation recovery in the Texas Panhandle.

35. Hormones, Highways, and the Road Ahead: Genomic Insights into Behavior and Survival of South Texas Wild Cats

Denay Hernandez,

Abstract: Roads are vital to economic expansion, but they act as pervasive barriers to wildlife movement and genomic connectivity. In South Texas, the bobcat (*Lynx rufus*) and ocelot (*Leopardus pardalis*) are prime roadkill candidates due to their wide-ranging dispersal. Ocelots are endangered in the United States and face reduced gene flow and population size from roads limiting dispersal and isolating individuals. Roads can disrupt hormonal pathways, resulting in infertility, altered parental care, and reduced kitten survival. Understanding hormonal genomics and its ecological consequences will help connect the hormonal activity that drives road-crossing success with overall fitness. While local road ecology research has progressed, no genomic research has examined how hormones related to stress, reproduction, and behavior affect road-crossing decisions in wild cats. In this study, bobcat and ocelot blood samples were used from across South Texas, including Laguna Atascosa National Wildlife Refuge and private ranches along U.S. Highway 77 and FM 1847. Genomic DNA was extracted, and whole-genome sequences were developed from over 400 samples collected from 1985 to present to evaluate genomic variation. Single-nucleotide polymorphisms were detected in five candidate hormonal genes to assess genomic diversity and population structure. These genes were identified in a functional categorization of the bobcat genome and selected due to their roles in stress regulation, reproductive fitness, and behavioral responses. Based on behavioral and physiological patterns, these findings will contribute to ocelot conservation by informing strategic placement of wildlife crossing structures and improving connectivity of felid populations facing increasing anthropogenic pressures in an urban environment.

36. Species-Specific Responses of Bats to Moon Illumination in Texas

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Sarah Fritts, Texas State University

Abstract: Nocturnal animals have various responses to moonlight, with some species exhibiting lunar phobia and others lunar philia. To assess the influence of both moon phase and moonlight intensity on the activity of bats in Texas, we assessed the activity of eight species during ~16 days in each of two seasons, fall and winter for each of three years (2020-2022) using acoustic surveys. We placed two acoustic detectors at 48 locations across Texas using the North American Bat Monitoring Program protocol. We conducted generalized linear mixed models with a negative binomial distribution, counts of bat passes as the response, and location as a random effect. In the fall, cave myotis (*Myotis velifer*), hoary bat (*Lasiurus cinereus*), and silver-haired bat (*Lasiurus noctivagans*) activity decreased with moonlight intensity ($p < 0.01$) and increased with moon phase, whereas tri-colored bats (*Perimyotis subflavus*) and evening bats (*Nycticeius humeralis*) exhibited the opposite effects. Activity of Brazilian free-tailed bats (*Tadarida brasiliensis*) and big brown bats (*Eptesicus fuscus*) were not influenced by moonlight. In the winter, activity of all previously mentioned bat species in addition to red bats (*Lasiurus* spp.) increased with moon illumination and decreased with moon phase. Results suggest bats in Texas have species-and seasonal-specific responses to moonlight, which may be related to differences in morphology, perceived predation risk, prey availability, foraging strategy, and/or roosting behavior; however additional research is needed to better understand these mechanisms.

37. Detecting Emergent Macartney Rose Using Very Fine Resolution Imagery

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Abstract: Macartney rose (*Rosa bracteata*) is an invasive woody species that poses a significant threat to the biodiversity and habitats of Texas rangelands. It can be difficult for managers to detect all the individual emerging plants within an area. High resolution drone imagery offers a unique approach in detecting this species. Segmentation is a preliminary step in the process of supervised object-based classification. This process groups neighboring pixels that share similar characteristics in shape, texture, and color. However, there is very little information on how to use segmentation to classify Macartney rose. Our objective is to determine the segmentation parameters that yield the highest accuracy of Macartney rose patches and the minimum detectable patch size. To achieve this, we conducted a range of classifications using varied segmentation parameters. Segment size varied from 20 to 900 pixels and spectral and spatial detail ranging from 15 to 20. Once classified, accuracy assessments were conducted using a confusion matrix. We were able to detect a minimum patch size of Macartney rose as small as ~13cm². The overall accuracy of our classifications is 86% using a segment size of 100 pixels and a spatial and spectral detail of 17. These results will improve the methodologies for segmentation by providing a range of settings according to the minimum detectable patch size of Macartney rose. With improved detection of invasive species, managers will be able to respond to early invasions, thus maintaining or improving native habitats.

38. **Scouting For Science: Citizen Hunters and Ai Acoustic Tools in Avian Research**

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Jessica Glasscock, Stephen F. Austin State University

Reuber Antoniazzi, Stephen F. Austin State University

Robert Sanders, Boggy Slough Conservation Area - T.L.L. Temple Foundation

Abstract: Biodiversity monitoring at large spatial scales requires substantial time, effort, and financial resources, prompting growing interest in citizen science and emerging technologies to support wildlife research. Hunters represent a large stakeholder group, approximately 12 million people in the U.S., whose routine presence in the field provides unique opportunities for data collection. We evaluated whether deer hunters participating as citizen scientists could generate avian species richness data comparable to detections from autonomous recording units (ARUs) analyzed with the AI-driven classifier BirdNET. We paired ARU's with 12 hunting stands across bottomland hardwood, upland pine, and mixed pine–hardwood communities on the Boggy Slough Conservation Area, in East Texas. Twenty-five hunt club members were trained to use the Merlin Bird ID app and recorded detections during hunting sessions between October and December 2024. Preliminary results indicated that ARUs paired with BirdNET detected greater avian richness than hunter-generated Merlin observations. However, although overall hunter participation rates were low, those who did participate contributed regularly, demonstrating strong engagement among committed individuals. These findings align with previous research showing that citizen science can meaningfully support avian monitoring, particularly when combined with machine-learning tools capable of processing large acoustic datasets. Our results suggested that engaging hunters as citizen scientists can enhance avian monitoring, especially because of the larger area these monitoring actions could cover, which could be further strengthened by strategies that promote active participation. Integrating hunter observations and ARU-based AI analyses may offer a cost-effective approach to expanding biodiversity monitoring while strengthening stakeholder involvement in conservation.

39. Observations of Tree Swallows Using Bird Boxes on Fishers Island Restored Maritime Grassland

Francisco Salgado, Tarleton State University

Tyler McMahon, Tarleton State University

Heather Mathewson, Tarleton State University

Adam Mitchell, Tarleton State University

Abstract: Grassland birds have declined across the globe, in part due to loss and fragmentation of nesting habitat. The implementation of artificial nest boxes is a common management strategy to provide shelter for nesting species in grassland restoration projects. Insectivorous birds, such as tree swallows, *Tachycineta bicolor*, and eastern bluebirds, *Sialia sialis*, can benefit from these nesting boxes and provide valuable pest control for insect populations. The purpose of this project is to observe occupancy of artificial nest boxes placed in a maritime grassland undergoing invasive plant removal on Fishers Island, New York. We performed weekly nest box surveys during summer 2025 until nesting stopped for the season. We measured species presence, nest use, and nestling survival during the breeding season. We also recorded differences in orientation and height of the nesting boxes as well as density of vegetation and proximity to nearest trails. We also conducted point counts proximate to nesting boxes to determine bird species presence and richness. We monitored a total of 10 nesting boxes in a 48.6 ha grassland, 4 of which exhibited occupancy by breeding tree swallows. We also noted potential disturbances by nearby breeding grassland birds, such as red-winged blackbirds, *Agelaius phoeniceus*, that may have attributed to tree swallow nestling failures in some of the observed nesting boxes. Our findings will provide insight for the Fishers Island Conservancy to evaluate management efficacy and restoration success in improving grassland bird breeding success, occupancy, and biodiversity in a maritime grassland.

40. Comparing High-Cost and Low-Cost Thermal Imagers for North Texas Bird and Bat Detection

Jasmine Gonzalez, University of North Texas

Joshua Morales, University of North Texas

Shyann Sanchez, University of North Texas

Willow Fox, University of North Texas

Abstract: Thermal imaging technology is widely used for monitoring wildlife, yet costs among devices often vary dramatically. This study aimed to evaluate whether a low-cost thermal imaging model, the Topdon TS004 Thermal Monocular, performs comparably to a high-cost model, the Pulsar Telos XL50 Thermal Monocular, for detecting birds and bats flying overhead. In the white-hot mode, we expected the high-cost imager to detect more birds and bats than the low-cost imager with better clarity. Surveys were conducted between 29-X-2025 to 19-XI-2025 over five nights at five separate locations within Denton, Texas (Denton Co.), between 2200 and 2300. The two imagers were calibrated by focusing on one object about 1200 meters away to ensure similarly clear images. Two 30-minute observation intervals were conducted per night, and both thermal imagers were set to the white-hot mode. Two to four observers recorded all detections captured by both devices. Across all survey nights, the high-cost device had a greater total number of detections for both birds and bats, indicating a performance advantage. There were 194 birds and five bats detected with the high-cost imager and 156 birds and two bats with the low-cost imager. From the survey period, we concluded that although low-cost imagers can document a wider field of view for wildlife detection, high-cost devices provide a narrower field of view for detection rates of wildlife and higher target rate efficiency. These results highlight a tradeoff between affordability and data quality, offering guidance for equipment selection in future wildlife monitoring efforts.

41. Influences of Pinyon–Juniper and Sagebrush Fuel Reduction Treatments on Mammal Communities of Sagebrush-Steppe Systems in Central Utah

Katie Pennartz, Texas A&M University - Kingsville

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

Michael Cherry, Caesar Kleberg Wildlife Research Institution

Jennifer Frey, New Mexico State University

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

Abstract: Altered disturbance regimes and changing climate conditions are increasing wildfire risk in the southwestern United States, which can be mitigated through woody biomass removal. Woody fuel reduction can also increase structural heterogeneity and potentially improve habitat for wildlife, though impacts are often species specific. Due in part to these differences in habitat requirements, evidence remains inconsistent on whether vegetation management actions positively influence mammal occupancy. Patch characteristics created by treatments, including size and configuration, may influence movement pathways and resource availability, contributing to variation in mammal responses. Grass Valley is a Bureau of Land Management property in central Utah where managers have implemented fuel reduction projects since the early 1960s, targeting pinyon–juniper (*Pinus–Juniperus* spp) and old-growth sagebrush (*Artemisia* spp) stands. Our goal is to evaluate how these woody plant removal practices influence mammal community dynamics. In the first year of the study, we deployed 120 camera traps within treatment interiors, along treatment edges, and in adjacent untreated areas to document species activity across a gradient of treatment types. In the second year, we will intensively sample selected treatments using finer-scale camera grids to assess spatial patterns of use within treated areas. We will quantify occupancy and activity patterns using generalized linear mixed models and generalized additive models to evaluate mammal responses across multiple spatial scales. By assessing the ecological outcomes of woody fuel reduction, this research will inform land management strategies designed to reduce wildfire risk while maintaining habitat conditions that support diverse mammal communities throughout the year.

42. Comparison of Active and Passive Avian Monitoring Methods at a Solar Facility and Reference Site in Texas

Maria Ramirez, Texas State University

Emily Stelling, Texas State University

Madison Nadler, Texas State University

Sarah Fritts, Texas State University

Leroy Walston, Argonne National Laboratory

Abstract: The rapid expansion of utility-scale solar energy (USSE) has raised concerns about its impacts on avian species, with recent assessments indicating that USSE can affect birds both directly and indirectly. Direct impacts include mortality risks, such as collisions with photovoltaic panels or burning at concentrated solar power systems, while indirect impacts include habitat loss and fragmentation associated with large solar installations. Accurately tracking wildlife at these facilities is essential for identifying species presence and informing effective management actions. Both active and passive monitoring methods are commonly used to study avian communities. Active methods include point counts, whereas passive methods involve technologies such as game cameras and acoustic recording units (ARUs). Because each method has inherent limitations, comparative monitoring studies are needed to evaluate their effectiveness at solar farms. In this study, we monitored birds using ARUs, game cameras, and point counts at a USSE facility and a reference site in Texas for 12 weeks between March and June 2025, coinciding with peak spring migration. During this period, ARUs were configured to record twice daily, cameras captured three photos per trigger, and 5-minute point counts were conducted once weekly. I aim to compare the effectiveness of these methods in assessing species richness at each site and will present preliminary results. Understanding monitoring efficiency can support more effective and cost-efficient management decisions that benefit both avian species and solar energy development.

43. Is Interference Competition Heating Up? Assessing the Effects of Patch-Burning on Sympatric Herbivores in a Guinea Grass-Dominated System

Grace Sagebiel, Texas A&M University Kingsville Student Chapter of The Wildlife Society

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

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

Daniel Woolsey, Texas A&M University - Kingsville

Sandra Rideout-Hanzak, Caesar Kleberg Wildlife Research Institute - Texas A&M University - Kingsville

Abstract: Pyric herbivory is an ecological pattern driven by the interaction of fire and grazing that helps structure and promote heterogeneity. White-tailed deer (*Odocoileus virginianus*) and domestic cattle (*Bos taurus*) are sympatric herbivores in many rangelands throughout North America, sharing similar resources, resulting in ecological competition. Understanding how these two herbivores respond to time-since-fire (TSF) and how this influences the strength of interference competition can help inform land management decisions that balance livestock production with wildlife recreation. From Fall 2023–Spring 2025, we deployed trail cameras across a grid in a South Texas rangeland dominated by non-native Guinea grass (*Megathyrsus maximus*) to determine how detections varied in response to TSF. Our objectives were to compare detections between deer and cattle in relation to TSF and determine how spatiotemporal overlap of activity (i.e., less overlap as a proxy for interference competition) changes across TSF. We estimated activity pattern overlaps and determined the significance by bootstrapping (1000 replicates) estimates of \hat{c} , where 0 indicated no overlap, and 1 indicated complete overlap. Estimates of activity overlap were lowest when TSF was 24 months ($\hat{c} = 0.41–0.62$). Evidence, albeit weak, existed for potential seasonal interactions with TSF and activity overlap in cattle and deer. Our results indicate that the implementation of fire in Guinea grass-dominated rangelands caused temporal niche overlap to change, highlighting future avenues of research towards a better understanding of interference competition between two species in South Texas rangelands.

44. Mapping Bat Diversity: Spatial Patterns of Species Richness and Activity in the Lower Rio Grande Valley

Shyann Sanchez, University of North Texas

Kati Wall, University of North Texas

Eric Alexander Blake, University of North Texas

Abstract: The National Wildlife Refuge System (NWR) in the Lower Rio Grande Valley (LRGV) is a biodiversity hotspot in South Texas, yet bat communities remain poorly documented. Because of limited surveys, it is unknown what spatial variation in bat species richness and acoustic activity occurs across the refuge system. To address this gap of research, we placed five bat detectors at three sites for three-to-five-day cycles during spring migration and summer breeding. Detectors were set to record bats from 30 minutes before sunset until 30 minutes after sunrise each day. The resulting data was analyzed using the Wildlife Acoustics Kaleidoscope Pro database which recorded 8,434 bat acoustic signals over an average of fifteen recorded nights and identified fourteen bat species. Species richness and community composition varied across all sites, with the southern yellow bat (*Lasiurus ega*) being the most common bat species occurring at all refuge units, and the eastern red bat (*Lasiurus borealis*) being the least common. We also recorded 670 detections of the tri-colored bat (*Perimyotis subflavis*), a species which is currently nominated for federal listing, across all study sites. Although overall abundance did not differ drastically, community composition changed in thornscrub openings adjacent to the U.S. border. As bat populations continue to decline due to disease and habitat fragmentation, it is important to lay the foundation of species occupancy in South Texas. This preliminary data highlights essential spatial patterns of bat occupancy and emphasizes the conservation value of the LRGV NWR.

45. Ecological Restoration of Thornforests Following Cropland Abandonment: A Chronosequence Analysis

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

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

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

Abstract: The Lower Rio Grande Valley (LRGV), Texas is a biodiversity hotspot that supports the northern distribution of many wildlife species and unique plant communities, such as the characteristic Tamaulipan Thornforest. An estimated degradation of 95% of the once continuous vegetation community has prompted an increase for ecological restoration. Active restoration is an action-based management technique that includes planting seedlings and has historically been the prevailing restoration method. Passive restoration consists of leaving a site to regenerate without intervention, which can be a more cost-effective approach to restoration. This research sought to assess the potential of active and passive restoration through a chronosequence framework, in which a space-for-time substitution approach was used to assess ecological succession or other long-term changes across a series of different aged restoration sites. Beginning May 2025, we recorded plant community metrics along randomly placed transects, including vegetation composition/structure, microclimate, and soil health characteristics. We collected data across nine treatments, including four different age classes of active and passive restoration areas and one old-growth forest reference community. These treatments had three replications that represented different physiographic zones within the LRGV. Preliminary results suggest that passive restoration has comparable vegetation structure to active restoration, but species composition is limited to fewer recurring species. Invasive, non-native grasses dominate the herbaceous understory of both active and passive restoration sites and are correlated with arrested ecological succession or lead to alternate stable states. Baseline data from this research will provide indicators for the trajectory of thornforest restoration through microclimate and vegetation characteristics.

46. Insights Into the Temporal and Spatial Segregation Between Brown and Spotted Hyenas in Botswana.

Adam Hernandez, Texas A&M University Student Chapter of The Wildlife Society

Max Larreur, Safari Club International Foundation

Christopher Comer, Safari Club International Foundation

Daniel Scognamillo, Texas A&M University Natural Resources Institute

Abstract: In many mammalian systems, species coexistence emerges when species adopt strategies that minimize direct temporal or spatial interactions and enable them to occupy overlapping landscapes without relying on competitive separation. To explore how these dynamics operate in natural and human-influenced environments, we examined detections of brown and spotted hyenas across space and time at 3 sites in Botswana representing different land-use types (e.g. conservation areas, hunting concession/communal areas, and cattle ranches). We used camera trap data collected between June – September 2023 ($n = 154$ camera locations) across ~ 2700 -km² and kernel density estimation to identify activity patterns and overlap amongst land-use types. We documented 2576 detections of brown hyenas (217 = conservation areas; 929 = hunting concession/communal areas; 1430 = cattle ranches) and 9024 detections of spotted hyenas (6972 = conservation areas; 111 = hunting concession/communal areas; 1941 = cattle ranches). Activity overlap between the two species was relatively high (range: 0.80 – 0.87) across all 3 land-use types, indicating consistent nocturnal activity patterns. However, there was variation in the magnitude and number of activity peaks for brown and spotted hyena across land-use areas, indicating potential influence from land-use on activity of these two species. Additionally, despite having high temporal overlap in activity, hyena detections varied spatially within and amongst land-use types. While few studies have analyzed brown and spotted hyena temporal overlap across land-use types, our results highlight the potential impacts of land-use on the temporal and spatial overlap and coexistence of these broad-ranging carnivores.

47. Utilization of Urban Greenspaces by Feral Hogs In 2024 In Denton County, Texas

Erika Suarez, University of North Texas

Issabella Serrani Gallego, University of North Texas

Andrew Gregory, NA

Abstract: Feral hogs (*Sus scrofa*) cause millions of dollars in damage to agricultural and natural landscapes throughout the US each year. In addition, they are also likely a direct vector of disease between wild and domestic animals. This makes them a top management priority and challenge for state and federal management agencies. An often-overlooked potential refuge for feral hogs is urban green spaces and parks. Urban green spaces are often difficult to manage feral hogs because many of the traditional management and culling activities are prohibited within city limits or are not well-accepted by the public. Additionally, knowledge gaps exist as the presence or prevalence of feral hogs utilizing urban green spaces. In this study, motion sensitive cameras were used to estimate the relative abundance of feral hogs in five urban green spaces in Denton, Texas. Cameras were deployed from June 2024 to January 2025, totaling 1,037 camera days with an average of 207 active camera days. Three of the five sites surveyed did not have feral hog detections. The remaining two sites have a relative abundance of feral hogs 66, and 65 feral hogs or 0.12-0.23 hogs per acre respectively. In addition, these areas are contiguous to rural areas outside of city limits, and we frequently observed the presence of piglets, suggesting that these areas could serve as important refugia and sources for feral hogs outside of the city.

48. Winter Bird Occurrence and Land Cover Change Along the Texas and Louisiana Coast

Karen Hondrick, Texas Tech University
Warren Conway, Texas Tech University
Cade Coldren, Plant and Soil Science
Chao Xu, Texas Tech University
Courtney Ramsey, Texas Tech University

Abstract: The Texas and Louisiana coasts provide a diverse array of important bird habitats throughout the annual cycle. Extensive anthropogenic land use changes have altered and reduced quantity and quality of coastal-associated habitats. We examined temporal trends (38 years) in winter bird occurrence relative to regional land cover change across the Texas and Louisiana coast using Christmas Bird Count (CBC) data from 32 count circles (21 in Texas, and 11 in Louisiana) from 1985-2022 and paired those with National Land Cover Database (NLCD) classified raster imagery to assess effects of land use change on species occurrence. We are focusing upon 19 bird species including some of greatest conservation need (SGCN), and used Gradient Forest (GF) analyses in preliminary models to assess the response by yellow-rumped warbler (*Setophaga coronata*) abundance (weighted by survey effort) to spatiotemporal changes in landscape cover. We used this species for initial modeling due to its ubiquity throughout the study region. We found yellow-rumped warblers were positively associated with shrub cover and deciduous forest cover from the first two Principal Components within the GF structure, where PC1 and PC2 combined to explain 59.9% of the variation in these models. Future analyses will incorporate wetland-dependent guilds (Rallidae in particular) because of their conservation foci, and also examine their response to trends in emergent wetland changes regionally during the temporal period of interest. This research blends citizen science and NLCD data to provide conservation planners with tools to aid in developing regional bird-centric management decisions.

49. Nest-Site Selection and Movement Patterns of Translocated Female Eastern Wild Turkeys in the Post Oak Savannah of Texas

Laken Mize, Texas Tech University

Warren Conway, Texas Tech University

Cade Coldren, Plant and Soil Science

Kyle Hand, Texas Parks & Wildlife Department

Courtney Ramsey, Texas Tech University

Jason Hardin, Texas Parks & Wildlife Department

Abstract: Efforts to restore Eastern Wild Turkey (*Meleagris gallopavo silvestris*; hereafter EWT) populations in east Texas due to declines and localized extirpations have occurred for nearly 100 years. Restoration beginning in 1979 primarily translocated EWT from out of state, but a considerable number of Rio Grande Wild Turkeys (*M. g. intermedia*; hereafter RGWT) were translocated to the Post Oak Savannah ecoregion to reestablish huntable wild turkeys. Although population persistence has improved over time, little is known about how translocated females respond behaviorally to novel landscapes during the nesting season – particularly the year of translocation. We fitted 97 translocated hens from multiple source states with GPS transmitters, released at four sites across Anderson County, Texas during 2014 and 2015. Location data were recorded twice daily before nesting season and increased to 16 locations daily starting March 15th. We used location data to characterize home-range dynamics and nesting behavior. We documented 9 hens with successful nests, with 3 of those producing a brood. Daily movements varied between successful and failed nesting hens, where successful hens had reduced movement, and smaller home range during incubation than those that had failed nests. Similarly, we found home ranges varied between hens with and without broods, where those with broods had more concentrated areas despite large home ranges overall, indicating some nest-site fidelity after hatching. This study provides insight into acclimation and movement ecology of translocated female turkeys, to improve nesting success and long-term population stability of EWT in eastern Texas.

50. Developing Habitat Availability Models for Bumble Bees in Texas Based on Availability and Seasonality of Floral Resources

Hannah Atkinson, Tarleton Student Chapter of The Wildlife Society

Ryan Ament, Tarleton State University

Ty Cospers, NA

Addison Singleton, Tarleton State University

Adam Mitchell, Tarleton State University

Heather Mathewson, Tarleton State University

Abstract: Pollinating insects are exhibiting long-term declines on a global scale; however, the magnitude of this decline varies across taxa, space, and time, requiring improved strategies to monitor pollinators at local scales. Our project seeks to evaluate bumble bee (*Bombus* spp.) floral resource availability across Texas to develop habitat availability models. This project is part of a larger study assessing the distribution and conservation status of the American bumble bee (*B. pensylvanicus*), sonoran bumble bee (*B. sonorus*), and variable cuckoo bumble bee (*B. variabilis*) in Texas. We surveyed vegetation on public lands across each ecoregion in spring, summer, and fall in 2024 and 2025, recording plant species richness at each site. Alongside field collected data, we concurrently used community aggregate databases (i.e., iNaturalist) and county checklists to identify floral distribution. To identify the timing of flowering periods for floral host plants for bumble bees, we overlapped distribution with phenology data from the Lady Bird Johnson Wildflower Center. Finally, we developed predictor models to identify landscapes with the greatest likelihood of bumble bee occupancy based on host plant distributions within and across seasons. Preliminary evaluation of data from iNaturalist suggests high occurrence of host plants aggregated in urbanscapes across all seasons; however, we recognize this is biased. Both iNaturalist data and field collected data demonstrate little difference in number of species present on the landscape across fall, summer, and spring seasons. This assessment will help refine our understanding of the available resources for rare and cryptic bumblebees within Texas ecoregions.

51. Restoration of Oil and Gas Pads in the Permian Basin of West Texas

Kendall Christensen, Borderlands Research Institute - Sul Ross State University

Silverio Avila, Texas A&M Agrilife Extension

Carlos Gonzalez, Borderlands Research Institute - Sul Ross State University

Antonio Cantu, Borderlands Research Institute - Sul Ross State University

Julie Myers, Texas Parks & Wildlife Department

Abstract: The Permian Basin, located in West Texas and South-East New Mexico, is the largest oil and gas-producing region in the United States. Once oil and gas well sites are decommissioned, plugged, and all infrastructure is removed, there is an opportunity for restoration. The compact and bare caliche sites are environments that limit vegetation growth and biodiversity. Restoration on these sites is challenging due to the region's limited rainfall, poor soil fertility, and extreme temperatures that contribute to high evapotranspiration and slow vegetative recovery. This study evaluated the effectiveness of soil amendments in addition to seeding locally adapted native seed mixes on twenty-five plugged well pads. Each pad was divided into eight subblocks that received randomized soil treatments. Treatments included soil erosion control blankets and Hydrretain (moisture retention strategy), biochar, and organic matter (50% topsoil + 50% mulch). We recorded vegetation composition and cover at peak growing season. We hypothesized that treatments combining biochar, organic matter, and moisture-retention strategies would positively correlate with plant richness and diversity. A non-metric multidimensional scaling (NMDS) analysis was done to evaluate the relationships between the treatments and plant communities. Overall, plant abundance increased under each treatment. Results showed plant communities were similar in water-retention treatments but different from the plant communities in the soil physical treatments. By utilizing water-retention treatments for restoration in arid ecosystems, land managers can promote greater plant diversity and abundance of native perennial grasses that may lead to more usage by arid terrestrial wildlife and grassland birds.

52. Changes in Vegetation Attributes and Avian Species Diversity Following Herbicide Application to Manage Honey Mesquite

Shaelyn Rainey, Texas Tech University

Aaron Norris, Texas Tech University

Cade Coldren, Plant and Soil Science

Caitlyn Cooper-Norris, Texas Tech University

Alice Mathew, Texas Tech University

Jesse Haudrich, NA

Abstract: Many grassland-obligate bird species are considered Species of Greatest Conservation Need (SGCN) due to declining numbers attributed to habitat loss and fragmentation of native rangelands, largely due to brush encroachment or conversion to cropland/monocultures. Reduction of encroaching brush species, such as mesquite (*Prosopis glandulosa*), can improve native grass cover, biomass, and habitat structure for grassland-obligate birds. In July 2025 at the Three Rivers Ranch in Crowell, Texas, we applied clopyralid at $0.56 \text{ kg}\cdot\text{ha}^{-1}$ plus aminopyralid at $0.68 \text{ kg}\cdot\text{ha}^{-1}$ to 3 10-ac plots, each of which was paired with an adjacent control site. We collected vegetative cover, biomass, and visual obstruction data in July and October of 2025. Each site had an autonomous recording unit (ARU) monitoring avian presence from July - October. ARU data were processed using BirdNet. No difference in bird species count by primary habitat type was observed between July and October or between sprayed and unsprayed sites in either month. Herbaceous cover was similar at sprayed and unsprayed sites in both months. Forbs cover and biomass was greater in July ($P < 0.05$), while grass cover was greater ($P = 0.02$) in October. C3 grass biomass was greater in October than July ($P = 0.01$), while C4 grass biomass tended to be greater in October ($P = 0.06$). Forb biomass was lower in the second sampling than the first ($P < 0.001$). Results do not indicate increased grassland bird use in sprayed areas as of three months after herbicide application, but further monitoring will be required.

53. UAV and GPS Applications for Understanding Scaled Quail Habitat in the Chihuahuan Desert

Luke Christensen, Borderlands Research Institute - Sul Ross State University

Carlos Gonzalez, Borderlands Research Institute - Sul Ross State University

Silverio Avila, Texas A&M Agrilife Extension

Antonio Cantu, Borderlands Research Institute - Sul Ross State University

Abstract: Little is known of scaled quail (*Callipepla squamata*), fine-scale habitat use across seasons. Traditional habitat mapping techniques often rely on coarse imagery datasets and consequently overlook localized microhabitats, fine-scale landscape features, utilized by scaled quail. Effective property-scale management requires the acknowledgement of microhabitats such as clumps of critical vegetation like western mesquite that provide seed forage and native grasses that offer lateral cover, along with their spatial distribution. Seasonally, aspect, elevation, and availability of different cover types may influence habitat utilization by scaled quail. Using GPS data from radiocollared individuals, UAV imagery, and in-situ verification, I will identify scaled quail habitat characteristics associated with seasonal variation at Nine-Point Mesa Ranch. Understanding the roosting behavior of scaled quail is essential for properly managing habitat and protecting habitat features, utilized and favored across various seasons. This study will investigate how roosting site characteristics vary across spring, summer, fall, and winter. Diel habitat preferences such as midday loafing cover can be inferred along with evening roosting preferences. In regard to diel and seasonal habitat preferences I hypothesize scaled quail will select denser, sun-exposed vegetation at higher elevations during cold months and lower-elevation sites with more shade in warmer months. Roosting in sunlit or sheltered locations in winter may improve warmth, while shaded or low areas may help avoid summer heat stress. Spatial analysis will assess shifts in scaled quail habitat use and thermal buffering behavior.

54. Predator Overlap at Artificial Water Sources in South Texas

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

Michael Tewes, Texas A&M University - Kingsville

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

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

Joelysa Garcia, Ceas

Abstract: Artificial water sources (guzzlers) have been established at Laguna Atascosa National Wildlife Refuge to support wildlife populations under increasingly dry conditions. These guzzlers were primarily developed to aid the recovery of federally endangered ocelots (*Leopardus pardalis*). However, other carnivores such as bobcats (*Lynx rufus*) and coyotes (*Canis latrans*), also use these sites, potentially leading to temporal overlap that could influence ocelot behavior. This study aims to examine patterns of predator activity and potential interspecific interactions and behaviors at guzzlers using long-term camera-trap monitoring. Images from 14 guzzler sites will be processed using image-sorting software to identify species' presence and visitation timing. This data will be used to describe relative activity patterns and evaluate overlap in guzzler use among sympatric predators and mesopredators. Findings from this research will contribute to a broader understanding of behavioral interactions among carnivores in semi-arid environments and guide guzzler placement to support ocelot conservation.

55. Monitoring Avian Biodiversity in the Lower Rio Grande River Valley Using Passive Acoustic Monitors

Carmen Burkett, University of North Texas
Sara van der Leek, University of North Texas
Jackson Maddox, University of North Texas
Alyssa Herrera, University of North Texas
Andrew Gregory, University of North Texas

Abstract: Linear barriers, such as highways, often fragment and degrade the landscape, which in turn can restrict species movement leading to reduced connectivity. The lower Rio Grande River Valley (LRGRV) is a biodiverse ecosystem that is experiencing increased anthropogenic activity and disturbance. This increased activity, necessitates understanding possible effects of these disturbances to the surrounding animal and plant populations to minimize and mitigate the impacts of these developments. Our study seeks to examine potential influences anthropogenic disturbance and linear barriers on local avian communities and neotropical migrants and to assess the efficacy of BirdNET in processing passively collected acoustic data. Using acoustic monitors throughout Lower Rio Grande National Wildlife Refuge system in Starr, Hidalgo and Cameron counties, we monitored bird presence, occupancy and diversity from February through June 2025 across ten NWR tracts and one state park. To identify species, we utilized the BirdNET application at a minimum confidence of 75%. Of the surveyed sites, Phillips Banco had the highest species richness and rarity weighted richness. La Parida Banco had the lowest RWR and SR but the highest Shannon diversity, Simpson Diversity and evenness. We also observed significant hot and cold spots of SR between the sampling points. Further analysis will examine the degree to which planned and ongoing restoration and mitigation efforts positively impact bird diversity along the Texas-Mexico border region of the LRGRV.

56. Spatial Overlap at Artificial Water Sources in South Texas

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

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

Michael Tewes, Texas A&M University - Kingsville

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

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

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

Abstract: Laguna Atascosa National Wildlife Refuge has installed artificial water catchments, known as guzzlers, to help wildlife persist under increasingly dry and variable climate conditions in South Texas. Although these structures were originally intended to enhance habitat for the endangered ocelot (*Leopardus pardalis*), they have also become regular watering points for other carnivores, including bobcats (*Lynx rufus*), coyotes (*Canis latrans*), and a range of mesopredators that roam the refuge. Because multiple predator species rely on the same limited water sources, there is potential for spatial and temporal overlap that may alter ocelot movements, access to resources, or avoidance behaviors. This project aims to analyze how predators use guzzlers by examining visitation patterns and potential interspecific interactions. Camera-trap images collected over several years at fourteen guzzler locations will be processed with image-sorting software to identify species, record the timing of visits, document behaviors, and quantify overall activity levels. These data will allow researchers to evaluate how much overlap exists among co-occurring carnivores and whether certain species display site-specific dominance, avoidance, or shifts in use. Understanding these relationships is important for assessing how artificial water developments influence carnivore behavior and habitat use in semi-arid ecosystems. Ultimately, the results of this study will provide valuable insight into predator community dynamics and support wildlife managers in refining guzzler placement, configuration, and long-term planning to better assist ocelot conservation efforts. The findings will also help clarify how water availability shapes carnivore interactions and identify conditions that promote coexistence among species at the refuge.

57. Types of Adaptive Bird Feeding Equipment Used by Individuals with Disabilities

Carlos Dubon Hinojosa, Virginia Polytechnic Institute and State University

Abstract: In the United States, over 96 million people partake in bird feeding and watching. While recreational bird feeding hasn't changed much since its creation, people with accessibility needs or disabilities may benefit from changes like more accessible viewing spots or special equipment to help with bird-related tasks. To improve inclusivity in conservation and outdoor recreation the Dayer Human Dimensions Lab at Virginia Tech partnered with the Cornell's Lab of Ornithology's Project FeederWatch to explore how people with accessibility needs and disabilities adapt to bird-feeding. A survey was distributed to Project FeederWatch participants, specifically analyzing responses from those who identified as disabled, neurodivergent, or experiencing accessibility challenges related to vision, hearing, cognition, mobility, mental health, chronic illness, or other conditions. Through inductive coding, we categorized survey responses into common themes with my research delving deeper into the types of adaptive equipment used for bird feeding. After analysis the results suggest that bird feeders with adaptive features, especially those that are easy to open, fill, and clean, are crucial for improving accessibility in bird feeding. Optical equipment like binoculars and scopes helps individuals with visual challenges, demonstrating how adaptive tools can benefit both people with disabilities and the general public. Additionally, adaptive hardware such as hanging systems, extended reach tools, and positioning aids play a key role in enabling physical interaction with bird feeders. By identifying these adaptations, conservation organizations, outdoor recreation managers, and birding communities can better support the needs of individuals with disabilities.

Abstracts: Noncompetitive/Professional Poster Competition

Exhibit Hall A2, February 20, 2026

4:00 PM – 5:30 PM

1. Influence of Nest Substrate on Nesting Success of Northern Bobwhite and Scaled Quail at RPQRR

Kyndal Underwood, Rolling Plains Quail Research Foundation

Dan Foley, Rolling Plains Quail Research Foundation

Ryan O'Shaughnessy, Rolling Plains Quail Research Foundation

Mitchell Riggs, Rolling Plains Quail Research Foundation

Abstract: This study evaluates nesting success and substrate use by northern bobwhite (*Colinus virginianus*) and scaled quail (*Callipepla squamata*) at the Rolling Plains Quail Research Ranch (RPQRR) over an 11-year period (2014–2025). Nest-site characteristics are known to influence reproductive success in ground-nesting birds, yet recent work rarely examines how specific substrate types shape nesting outcomes for these two species. We monitored 549 nests across diverse rangeland habitats to assess how substrate type affected nest fate. Each nest was classified by dominant substrate (e.g., grass, cactus, yucca, woody, litter) and as either hatched or failed. We compared nesting success among the three most common substrates—grass, cactus, and yucca—and between species using chi-square tests and logistic regression. Nesting success varied significantly among substrates ($P < 0.05$). Yucca and cactus nests exhibited the highest hatching success (62% each), whereas nests in grass substrates showed moderate success (54%). Mixed substrates containing grass components (e.g., grass–yucca, grass–woody) also demonstrated relatively high success, suggesting that structural complexity and enhanced concealment contribute to increased nest survival. Northern bobwhite primarily selected grass substrates, whereas scaled quail more frequently used cactus and yucca, indicating species-specific nesting strategies. These findings support the hypothesis that greater vegetative structure improves nesting outcomes and highlight differences in how bobwhite and scaled quail exploit available substrates. Management practices that maintain dense herbaceous cover while sustaining moderate shrub components may improve nesting success for both species. Promoting a mosaic of grass and shrub habitats can help accommodate species-specific preferences and enhance reproductive productivity across semi-arid rangelands.

2. Landowner Perceptions of Western Cattle-Egrets

Jhnette Zapalac-Janecka, Sul Ross State University McNair

Maureen Frank, Borderlands Research Institute - Sul Ross State University

Abstract: Western cattle-egrets (*Ardea ibis*) are small white herons commonly seen following cattle and other grazing animals. Originally native to Africa, they are now widespread across much of the Americas, where they feed on insects and small animals disturbed by livestock. Although they are a familiar presence on rangelands, little research has explored their ecological impact on these environments. Similarly, the perceptions about cattle-egrets of landowners are unknown, and may not be founded in scientific research. This project investigates the perceptions of cattle-egrets in rangeland ecosystems, focusing on their interactions with cattle, insect populations, and vegetation. We plan to conduct a mixed-mode human dimensions survey of landowners and land managers in 7 counties in Central Texas. We have also obtained soil samples from areas with varying levels of use by cattle-egrets to serve as a pilot for understanding local ecological impacts. Understanding perceptions of cattle-egrets and their impacts on the environment will support adaptive management strategies that balance livestock production with the conservation of rangeland biodiversity.

3. A Systematic Review of Feral Swine Incidents and Response

Jackson VerSteeg, Texas A&M University - College Station
John Tomecek,

Abstract: Wild pigs (*Sus scrofa*), commonly called feral pigs, hogs, or swine, are the modern-day descendants of the Eurasian wild boar living outside its native range, escaped domestic swine (*Sus scrofa domesticus*) roaming free, and their hybrids. Wild pigs are a source of agricultural, ecological, and economic damages in the United States. Little is known about direct negative incidents between humans and wild pigs such as attacks on humans, wild pig-vehicle collisions (WPVCs), and zoonotic disease transmission. This is largely related to an unknown and inconsistent flow of reporting of such incidents. Publicly available data will be used from government records, as well as both mass and social media. This will allow us to document the extent that government agencies receive reports of negative, human-wild pig incidents and how these reported incidents are documented. Initial data collection from government records suggests that documentation quality varies highly among states. Initial data collection from media sources suggests that it contains documented incidents that do not exist in government records, but issues remain regarding validity and feasibility. The purpose of this study is to identify pathways and consistencies in reporting negative, human-wild pig incidents nationwide. Through data analysis, we hope to identify geographic areas facing increased occurrence of either wild pig attacks, WPVCs, and zoonotic disease transmission to help direct management. From an analysis of incident response and reporting, we will provide recommendations for streamlining incident reporting and increasing valid data collection and reporting.

4. Relating Livestock Health and Wild Pigs on Rangelands

Cheyenne Voorhies, Texas A&M AgriLife Research

Vienna Brown, USDA, Animal Plant and Health Inspection Service, Wildlife Services

Landon Schofield, East Foundation

John Tomecek,

Abstract: Wild pigs (*Sus scrofa*) are an invasive species expanding their geographic range and population abundance across the United States. They are highly abundant in Texas, and increasing evidence shows an impact on animal agriculture through predation and disease transmission. Wild pigs carry and transmit numerous viral and bacterial diseases along with parasites, many of which pose a threat to humans, livestock, and wildlife species. There is also increasing concern that wild pigs negatively affect livestock health through stress or exclusion from feed sources, leading to a decrease in animal health and profitability. This project aims to generate a comprehensive understanding of how wild pigs impact rangeland cattle operations in semi-arid climate regions by researching the potential that wild pigs negatively impact livestock health. Livestock health data will be collected over the course of four years from paired, independent cattle herds across a study property located in South Texas. As wild pigs are trapped, euthanized, and sampled for disease prevalence in one herd, the other herd will receive no wild pig removals. Camera grids will monitor the wild pig population and abundance in these paired operational units. The data collected from these paired units will be analyzed to gain an understanding of differences in cattle health and performance under varying levels of wild pig presence and disease prevalence. These findings can be used to model economic impacts on livestock operations and guide future strategies for managing wild pigs in semi-arid climate regions.

5. Assessing the Correlation Between Bobcat Presence, Prey Presence, and Surrounding Environment in South Texas

Emma McMillian, Texas A&M University - Kingsville

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

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

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

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

Emma Brookover, Caesar Kleberg Wildlife Research Institute

Michael Tewes, Texas A&M University - Kingsville

Abstract: In South Texas, bobcats (*Lynx rufus*) are a wild cat species commonly detected in dense brush patches. They often hunt for small prey species such as cottontail (*Sylvilagus floridanus*) and rodents (*Rodentia* spp.). Variables such as brush density, water availability, and prey abundance can generate variance in their habitat zones. Similar research has been conducted in South Texas; however, other studies focused on ecological variables such as co-occurrence, abundance, behavior, and occupancy modeling across carnivore species. This project will assess the detection of bobcats at 46 camera sites, spread over 4,400 hectares (~ 17 square miles) on a South Texas ranch. Detections are considered 30-minute intervals for each species captured by game cameras. The surrounding environment, the presence of small prey species, and comparing these findings to the presence of bobcats will be evaluated to identify the ecological correlation between bobcats and small prey. First, we will compare bobcat detections to small prey detections. Second, we will use data as input to compare the detections of bobcats and small prey species to the habitat locality and habitat containing the camera. Our research depends on these data to facilitate future research projects that rely on bobcat trapping, bobcat spatial distribution, and behavioral studies. Our results will determine which habitat is best for future bobcat research projects and will better inform conservation strategies aimed at identifying what habitat needs to be protected and managed for bobcats and other wild carnivorous species in South Texas.

6. Bobcat and Canid Intraguild Competition at South Texas Wildlife Crossings

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

Thomas Yamashita, NA

John Young, Texas Department of Transportation

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

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

Emma McMillian, Texas A&M University - Kingsville

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

Abstract: The bobcat (*Lynx rufus*) is a widespread North American felid occurring from southern Canada to southern Mexico. Bobcat populations have historically fluctuated in response to hunting, extreme weather, road construction, and urbanization, all of which can cause extreme fragmentation. Urbanization can influence the behavior and distribution of wildlife, including bobcats and some species of canids. Researchers at Texas A&M University – Kingsville are currently monitoring six wildlife crossings—five along Farm-to-Market Road 1847 in Willacy County and one along US Highway 77 in Cameron County, Texas—built to facilitate safe wildlife movement across roads. This study assesses bobcat interactions that may be affected by intraguild wildlife competitions (*Canis latrans* and *Canis lupis familiaris*) at each construction site. We also examined how weather may influence the crossing use of bobcats and canids, and whether prey availability (cottontail detections) affects bobcat and canid presence. Data for this study was collected from September 2022 to September 2025, and a behavioral grading system was used to categorize interaction types at each crossing. We predict that crossings with higher canid activity will show reduced bobcat detections, crossing use will increase during the fall and winter, and increased prey detections will correspond with higher bobcat and coyote activity. The results from this study may reveal how bobcats and coyotes interact with wildlife crossings when exposed to spatial overlap, seasonal weather conditions, and different levels of prey abundance.

7. Dung Beetle Diversity in Grazing Regimes of Desert Grasslands

Christopher Mott, SRSU

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Abstract: Dung beetles (family Scarabaeidae) are keystone species and are ecological assessors of rangelands. Dung beetles decompose feces by actively breaking down dung pats by burying and processing dung through tunneling underground. Ultimately, incorporating nutrients into the soil, a crucial process for nutrient cycling in ecosystems. These invertebrates are significant to livestock operations as their coexistence with grazing ruminant's is necessary to improve the overall health of grassland ecosystems. This study took place at the Mimms Ranch Unit of the Dixon Water Foundation, a 6,474.97 hectare property nestled in the Marfa Grasslands of Far West Texas. The ranch has rotational grazing regimes, with a control continuous grazing pasture. Allowing for the opportunity to compare the response of dung beetles to different grazing systems. Therefore, this study examines the presence and diversity of dung beetles between the different grazing systems. Beetles were collected in 120 randomized pitfall traps across two different soil types within each of the two grazing systems. We used an Analysis of Variance to see if there was a difference in amount of Beetles between treatments ($P > 0.05$). Results suggest there is a difference between treatments with rotational regime having a higher number of dung Beetles. While the data collected from this study shows there is a difference in response of beetles, further research is needed to correlate the relationship between grazing systems, vegetation, and dung beetles properly.

8. Status and Trends of Texas Horned Lizards in the United States From 2014 - 2024

Javier Robledo, Texas A&M University - Kingsville
Scott Henke, Texas A&M University-Kingsville

Abstract: Texas horned lizards (THL; *Phrynosoma cornutum*) are an iconic reptile species native to the southwestern United States. We surveyed state wildlife agencies within the distributional range of THL to determine their legal status, current relative abundance, population trends, and distribution during 2014 and 2024. Historically, Texas horned lizards were found within nine south-central states; however, currently (2024), THL are found in six states, having been extirpated from Missouri, Arkansas, and Louisiana. The legal status of THL did not change within individual states during the past decade. Texas horned lizards are listed as state threatened in Texas, protected in Colorado and Oklahoma, and as non-game in New Mexico, Arizona, and Kansas. However, their abundance and population trend did change. In 2014, about 36%, 19%, 29%, and 16% of the THL population was considered increasing, stable, decreasing, and extirpated, respectively, from its historic range. Today, THL population was considered 9%, 41%, 20%, and 30% increasing, stable, decreasing, and extirpated, respectively, from its historic range. The overall population trend of THL during the past decade was a 12% decline from increasing to stable status, 12% decline from stable to decreasing status, and 16% of the population from the previous decade extirpated. If current trends hold for THL through time, we predict < 2 % of the THL population will be increasing, while 17% and 22%, respectively, will be exhibiting stable and decreasing trends, and 60% of the THL population will be extirpated within 75 years. Federal listing within the ESA is suggested for the species.

9. Exploring Genetic Connectivity of White-Tailed Deer Using Radio Collars and DNA Analysis

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

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

Michael Cherry, Caesar Kleberg Wildlife Research Institution

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

Abstract: Understanding population structure and the spatial scale at which wildlife populations function is fundamental for effective management. For white-tailed deer, movement and gene flow often extend beyond property boundaries, making it difficult to determine what truly represents a “local population.” Because many management decisions in South Texas are based on ranch or property lines, identifying the appropriate biological scale is essential for setting harvest goals, anticipating movement patterns, and maintaining long-term population health. The Falcon Lake region provides an ideal setting to explore these questions due to its habitat variation, extensive private lands, and diverse management practices. To examine how deer use this landscape, we incorporate GPS telemetry to document fine-scale movement, space use, and home-range overlap among individuals. These short-term movement patterns help reveal how deer navigate the environment and interact with neighboring groups. Complementing the telemetry data, genetic markers offer a broader picture of relatedness and gene flow across the region. Thousands of genetic markers allow us to detect population structure and evaluate how genetic connectivity aligns with landscape features and spatial distance. By integrating movement and genetic information, we can determine whether deer in the Falcon Lake area operate as one large, interconnected population or as several smaller, semi-independent units. Ultimately, defining the correct population scale will contribute to more effective management decisions. The results of this work will help refine strategies related to harvest, habitat planning, disease preparedness, and long-term conservation of white-tailed deer in South Texas.

10. Assessing Road Mortality Patterns of Bobcats and Sympatric Wildlife to Inform Ocelot Conservation Strategies in South Texas

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Thomas Yamashita, NA

John Young, Texas Department of Transportation

Emma Brookover, Caesar Kleberg Wildlife Research Institute

Michael Tewes, Texas A&M University - Kingsville

Abstract: Globally, road networks have been expanding rapidly and are expected to increase further in coming years. With more than 6.7 million km of roads available for public use, the United States benefits from a fast and efficient transportation network that facilitates the movement of people and goods across long distances. However, the same linear infrastructure can act as a physical barrier in wildlife movement resulting in habitat fragmentation. For wide-ranging meso-carnivores like ocelot (*Leopardus pardalis*) and bobcat (*Lynx rufus*), habitat fragmentation often increases the risk of wildlife-vehicle collisions leading to population level endangerment like it has with the ocelot. Because bobcats share similar movement patterns and habitat preferences with ocelots at south Texas, they are often used as a surrogate species to study and predict the impacts of roads on the more elusive ocelots. Building on this approach, we aim to describe the spatio-temporal distribution of wildlife-vehicle collisions along two South Texas highways by identifying potential roadkill hotspots and evaluating the environmental and road-related factors that contribute to collision risk. We will conduct wildlife road mortality survey along a section of US Highway 77 and Farm-to-Market Road 1847 once a week and record the spatial and temporal data of a roadkill. By identifying the key spatial, temporal, and environmental drivers of wildlife-vehicle collisions, this study will provide a foundation for predicting high-risk zones and informing the strategic placement of wildlife crossing structures, ultimately enhancing landscape connectivity and reducing mortality for bobcats, ocelot, and other sympatric species from vehicle collisions.

11. Are Seed Predators Filtering Mesophytic Tree Species Encroachment on Upland Sites in the Absence of Fire?

Josh Pierce, USDA Forest Service

Christopher Schalk, USDA Forest Service

John Willis, USDA Forest Service

Abstract: Surface fire is the primary ecological filter maintaining eastern North American woodlands. However, fire is not the only filter affecting species demographics, and in the absence of fire, the influence of secondary filters, such as seed predators, increases. To explore how different seed predator guilds affect individual species, we established cafeteria trials examining the effects of predator exclusion type (vertebrate exclusion and no exclusion), forest type (upland and floodplain), season (fall and summer), and focal tree (conspecific and heterospecific) affect seed availability for four fire-sensitive tree species at two sites in the southeastern United States. Additionally, we explored the effects of forest structure on seed predation to mechanistically explain seed mortality. Excluding vertebrate seed predators had no impact on seed predation for any species indicating that invertebrates were the primary seed predator. Winged elm (46%) was the most predated species in floodplains, significantly exceeding red maple (29%). In the uplands, sweetgum (77%), winged elm (72%) and red maple (70%) seed depredation all significantly exceeded that of loblolly pine (19%). Moreover, on upland sites, seed depredation of all species nearly doubled in the summer compared to fall. Sweetgum (61%) was more likely to be predated than loblolly pine (28%) regardless of focal tree identity. Increasing canopy and woody vegetation cover significantly increased the probability of red maple and winged elm seed loss. Collectively, these results suggest loblolly pine seeds have the highest probability of surviving seed predators, potentially increasing its odds of establishing upland sites in the absence of fire.

12. Analysis of Research Trends in the Texas Chapter of the Wildlife Society Using Data Mining of Annual Meeting Programs

Gabriel Andrade Ponce, Stephen F. Austin State University
Jessica Glasscock, Stephen F. Austin State University

Abstract: The Texas Chapter of The Wildlife Society (TCTWS), established in 1965, has long served as a cornerstone for wildlife science and management in the state. The Chapter promotes the profession, disseminates scientific information, and advocates for the integration of sound biological data into wildlife policy and decision-making. For decades, the annual meeting has been a central venue for sharing research, exchanging ideas, and fostering collaboration among scientists, managers, and institutions across Texas. Examining the evolution of the knowledge presented at these meetings provides valuable context for identifying emerging topics, shifting priorities, and long-term trends in wildlife conservation across the state. In this study, we apply text-analysis and data-mining tools to the abstracts submitted to recent TCTWS annual meetings. We characterize historical research trends in terms of focal taxa, ecological and management topics, and analytical approaches. Additionally, we quantify and describe the collaborative network among academic, governmental, and non-governmental institutions participating in the meetings. This work aims to provide an updated, data-driven perspective on how research themes and institutional collaborations have evolved within the TCTWS community. By documenting these patterns, we highlight new directions and persistent priorities as the Chapter continues to advance wildlife science and conservation in Texas.

13. Evaluating Wild Pig Fecal Pollution in Coastal Recreational and Oyster-Harvesting Waters

Lydia Cates, Texas A&M University - Corpus Christi

Abstract: Invasive wild pigs (*Sus scrofa*) are found across Texas with an estimated 2.6 million of the United States' 6.9 million animals residing in the state. While detrimental ecological impacts of feral swine are well documented in terrestrial environments, marine waters used for recreation and mariculture remain unassessed. Wild pigs are known carriers of many different viral and bacterial pathogens that can infect humans; fecal pollution originating from these feral swine can harbor these pathogens in marine waters and contribute to the overall health risk for recreators. We hypothesize that wild pig fecal pollution decreases water quality and adversely affects oyster mariculture. To test our hypothesis, water quality will be assessed over the course of a 12-month sampling period (January 2025-December 2025) along the Aransas River and Copano Bay. The assessment will involve measures of water quality and fecal pollution. Water quality will be assessed through measurement of environmental conditions (water temperature, salinity, specific conductance, dissolved oxygen, pH, transparency, chlorophyll-a, antecedent rainfall), nutrient concentrations (nitrite, nitrate, ammonia, total phosphorus, total Kjeldahl nitrogen, total dissolved Kjeldahl nitrogen), and fecal indicator bacteria concentrations (*Escherichia coli* and *Enterococci*). The presence and abundance of swine-specific fecal pollution will be determined by microbial source-tracking (MST) using the Pig2Bac PCR marker. Preliminary results show trace amounts of wild pig fecal pollution detected in water and oyster samples collected with ongoing analyses expected to contribute further support.

14. Mesocarnivore Activity on the Attwater Prairie Chicken National Wildlife Refuge

Alexia Salazar, Texas State University Student Chapter of The Wildlife Society
Joseph Veech, Texas State University

Abstract: The entire wild population of the Attwater's Prairie Chicken (*Tympanuchus cupido attwateri*) is currently confined to the APC National Wildlife Refuge. As such, the population may be particularly vulnerable to any factors that might threaten the survival of the chicks or breeding adults. In order to attract females, male prairie chickens form leks and display courtship behavior in certain areas (lekking grounds) of the refuge. In addition, particular areas of the refuge have acclimation pens where captive-bred chicks grow to maturity and then are released. Management efforts have sought to minimize threats like predation although data are lacking on the extent to which predators (coyotes, bobcats, opossums, raccoons, and skunks) frequent the lekking grounds and areas around the acclimation pens. We examined mesocarnivore activity and density in select locations on the refuge to determine if and where predators congregate in relation to areas important to the prairie chickens. Another question of particular interest was how frequently visited these areas were by the prairie chickens prior to the breeding season. To obtain these data, 10 wildlife trail cameras were placed at select locations in mid-December and retrieved in mid-January. The photos were reviewed, and the frequencies of predator appearances were compiled. Information on the occurrence of predators in critical areas of the refuge has the potential to be useful in the preservation of Attwater's Prairie Chickens and the refinement of management strategies such as incorporating the usage of species-specific predator deterrents.

15. Not a Wild Goose Chase - Effect of Western Cattle Egrets in San Antonio

Uriel Eddy, Texas A&M University - San Antonio

Daniel Guerra, Texas State University

Joseph Plappert, Texas Parks and Wildlife

Clay Green, Texas State University

David Smyth, Texas A&M San Antonio

Abstract: Western Cattle Egrets (*Ardea ibis*, hereafter WECE) in the San Antonio metropolitan area have become a nuisance species in mixed-species urban rookeries and could pose a health risk to the nearby human and bird populations. Egrets could be carriers or distributors of pathogens (e.g. *E. coli* or influenza) in high density rookeries. WECE are migratory birds that have adapted well to urbanized environments, often finding themselves in close proximity with humans. We hypothesized that WECE affect water quality through high frequency of guano deposits from nesting birds, and that WECE are carriers of harmful pathogens to nearby humans in these dense urban environments. We surveyed known, local rookery sites that were either active or historical—determined through city officials or local word of mouth—near bodies of water and took water samples from under the rookery and from an unoccupied location as a control. Coliform counts and total nucleic acid (TNA) data were obtained through IDEXX and qPCR processes, then compared to established gene banks.

16. A Noninvasive Field eDNA Sampling Method for Detecting the Endangered Houston Toad

Ciara Moroney, University of Texas at Tyler

Christopher Schalk, USDA Forest Service

Daniel Saenz, USDA Forest Service

William Lutterschmidt, Sam Houston State University

Matthew Greenwold, University of Texas at Tyler

Abstract: The Houston toad (*Anaxyrus houstonensis*) has been listed as an endangered species since 1973. Current conservation efforts for the Houston toad include releasing captive bred Houston toads into the wild. Following releases, the toads are often not seen or heard until the next breeding season. The primary method of detection are audio loggers. While audio loggers are effective in identifying Houston toads, they are only able to localize the calls to a general area that may include multiple potential breeding ponds. Therefore, a new sampling method that allows researchers to sample specific ponds may be useful for conservation efforts. Invasive aquatic sampling techniques such as trapping and seine netting increase the risk of bodily harm and death. One alternative noninvasive sampling method is environmental DNA (eDNA) sampling in combination with the highly specific and robust Loop Mediated Isothermal Amplification (LAMP) assay. Environmental DNA (eDNA) is DNA shed from organisms into the environment such as ponds. The LAMP assay is ideal as it operates under one temperature and is simple to run, which allows it to be used in the field. Here, we describe the development of a field eDNA LAMP assay for the Houston toad that will allow researchers to detect the Houston toad during and potentially after the breeding season. The assay has been tested and validated with eDNA water samples collected from aquariums at Fort Worth Zoo housing eggs and tadpoles.

17. Long-Distance Excursion by a Collared Peccary (Pecari Tajacu)

Daniel Benson, Texas A&M University - College Station

Edward Tomassetti, Texas A&M University - College Station

Abigail Dwelle, Texas A&M University - College Station

Emily Masterton, Texas A&M University - College Station

Marcus Blum, Texas A&M University - College Station

Jacob Dykes, Mississippi State University

Paul Lukacs, University of Montana

Whitney Gann, Texas Parks & Wildlife Department

Stephen Webb, Texas A&M Natural Resources Institute

Abstract: Movement is a fundamental process shaping animal populations and distribution. Long-distance movements such as dispersal and migration, as well as irregular behaviors like excursions, may influence fitness-related activities, including foraging, breeding, and survival. During a large cooperative study of collared peccaries (*Pecari tajacu*) in southern Texas, we documented an abnormal excursion by a GPS-collared female. The excursion occurred 20–24 October 2024, 12 days after the animal was captured and collared. Over five days, the female traveled 44.5 km before returning to her previously used area and rejoining a collared male, which was also collared from the same squadron. To compare this event to typical movement patterns, we examined averages and 95% confidence intervals for daily distance traveled. During the excursion, the female moved 4.7–13.2 km/day, whereas her movement outside this period averaged 1.8 km/day (95% CI: 1.5–2.1 km). These values were similar to those of other females ($n = 4$; 1.6 km/day; 95% CI: 1.4–1.9 km) and males ($n = 10$; 2.0 km/day; 95% CI: 1.9–2.2 km) in the study area. The reason for this unusually long-distance movement remains unknown, but it could have predisposed her to increased mortality risk, especially when crossing roadways. Fine-resolution tracking data made detection of this event possible and can further support investigations into group dynamics, irregular movement behaviors, and resource selection.

18. Comparison of Remote Monitoring Methods for Ducks in the Trans-Pecos

Jack Bussey, Borderlands Research Institute - Sul Ross State University

Maureen Frank, Borderlands Research Institute - Sul Ross State University

Daniel Collins, Borderlands Research Institute - Sul Ross State University

Abstract: There are several species of ducks that occur in the Trans-Pecos during migration, but our knowledge of what resources they use, when they are present, and where they occur is limited. Many researchers use eBird data and models to determine which species are commonly present in an area, but due to the relatively small number of birders and vast amounts of private land in the Trans-Pecos, eBird data are spatially and temporally sparse. A recent study that used point counts and automated recording unit (ARU) data to survey birds at dirt livestock tanks in the Marfa grasslands of Texas recorded several species of ducks, including blue-winged teal (*Anas discors*), green-winged teal (*Anas crecca*), and northern shovelers (*Anas clypeata*). However, there was not good overlap in detection of species between point counts and ARUs. Furthermore, duck calls can be difficult to correctly identify to species. For this research, we will study duck species presence at three dirt livestock tanks on a private ranch in the Trans-Pecos. To do this, we will pair game cameras with ARUs to compare detection between the two methods. Game cameras will also allow us to accurately identify the ducks as well as provide us with an estimate of waterfowl abundance. Our overall goal is to provide landowners and researchers with data on wintering waterfowl in the Trans-Pecos to guide management of these species and their habitats.

19. Impacts of Adaptive Grazing on Wildlife Communities in Arid Rangelands

Bailey Knick, Texas A&M University - College Station

Stephen Webb, Texas A&M Natural Resources Institute

Ashley Long, Texas A&M University - College Station

Abstract: Adaptive grazing systems use on-site forage production and regrowth data to guide decisions about future grazing frequency and intensity. The goal of adaptive grazing is to ensure proper rest and recovery of vegetation, which should increase livestock production, improve soil health, and maintain biodiversity in rangelands. However, the effects of adaptive grazing on wildlife are not well documented. To determine the potential impacts of adaptive grazing on avian and mammalian occupancy and species richness, we monitored 3 adaptively grazed pastures for one season with cattle present, with the intention to continue monitoring efforts 1 year post-grazing. From March to June 2025, we used acoustic monitoring units (ARUs) and trail cameras to sample 19 survey locations (1 site/113 acres) at our study site. We programmed ARUs to record for 30 mins, 3 times per day (dawn, dusk, and night) and set trail cameras to collect data when activated by motion (i.e., animal activity). We will use Sentinel-2 Level-2a imagery to calculate fractional vegetation cover as a proxy for habitat characteristics of each sampling location. In Season 1 we documented 128 avian species from ARUs using BirdNET classification software. We recorded 5 mammal species (i.e., *Lepus californicus*, *Canis latrans*, *Xerospermophilus tereticaudus*, *Dipodomys deserti*, *Onychomys leucogaster*) using trail cameras. In 2026 (year 2), we will conduct 1-year post-grazing monitoring. These data then can be used to assess potential impacts of cattle presence and their effects on species richness and occupancy, particularly ground nesting birds or species of conservation concern.

20. Comparing Spectral Indices to Analyze a Large-Scale Wildfire: The 2024 Panhandle Wildfire

Riley Alvarez, Texas A&M University - College Station

Conner Ties, Texas A&M University - College Station

Morgan Treadwell, Texas A&M Agrilife Extension

Valeria Enciso, Texas A&M Agrilife Extension

Xavius Ortiz, Texas A&M University - College Station

Humberto Perotto, Texas A&M University

Abstract: The Smokehouse Creek wildfire was the largest of four major fires that spread across the Texas Panhandle in late February of 2024. This fire burned over 400,000 hectares and is considered the largest grassland fire in the U.S. and the largest wildfire in the recorded history of Texas. The fire caused major economic damage to agriculture communities estimated to be nearly \$123 million dollars and destroyed ~130 businesses and homes. The objectives of this study are (1) to compare two spectral indices used in identifying burn severity to map the intensity of the Smokehouse Creek Wildfire and (2) assess the usefulness of each method in predicting fire movement/intensity through the watersheds. First, we selected sites throughout the Canadian River drainage that experienced the wildfire (lower watershed, mid-elevation, and upland). We acquired imagery from Sentinel (time period, pixel resolution, bands, etc.). We then used the acquired imagery to extract Normalized Burn Ratio (NBR) and Burn Area Index (BAI) to assess burn intensity. Our comparisons will help researchers have a better understanding of which method to use to assess burn intensity in rangeland systems and help with mitigation strategies for wildfire spread through watersheds.

21. Greater Roadrunner Range Expansion: Evaluation of Climatic and Landcover Changes

Ty Cosp,

Ashley Long, Texas A&M University - College Station

Heather Mathewson, Tarleton State University

Abstract: The greater roadrunner (*Geococcyx californianus*) is an iconic species of arid and semi-arid ecosystems in the southwestern United States. In the US the species' range spans across the southwest and into western Missouri, Arkansas, and Louisiana. Many avian species are experiencing range shifts due to environmental change, and preliminary observations of decadal occurrence records suggests a possible northern and eastern expansion of the roadrunner. To evaluate the drivers of this potential expansion, we will evaluate associations between roadrunner occurrences, climatic conditions, and landcover changes. We will obtain occurrence data from the Global Biodiversity Information Facility, which obtains records from several sources, then filter and verify records for spatial accuracy, and align them with climatic variables from the National Oceanic and Atmospheric Administration and landcover data from the National Land Cover Database. We will analyze variables at a decadal-scale and, if needed, at a semi-decadal-scale. Using spatial and graphical analyses, we will evaluate how shifts in temperature, precipitation, and landcover types correspond with changes in roadrunner distribution. We anticipate identifying climatic and landscape features that facilitate the species expansion, particularly in transitional zones affected by urbanization, agriculture, and conservation management. This study will improve our understanding of how adaptable species like the roadrunner respond to altering landscapes and provide insight into broader patterns of avian range changes in the face of climate and land-use change.

22. Impacts of Feral Hogs on Rangeland Ecosystems

John Taylor, Texas A&M University - College Station

Stephen Webb, Texas A&M Natural Resources Institute

Jim Cathey, Texas A&M University Natural Resources Institute

Abstract: Feral hogs (*Sus scrofa*) are a non-native, invasive species that have been observed in 39 states as well as the territories of Guam, the U.S. Virgin Islands, and Puerto Rico. Feral Hogs also cause a minimum of \$3.5 billion in damages across the United States each year. However, the ecological and economic impact of feral hogs on rangelands is not well documented or quantified. Rangelands make up 40% of the earth's land area, and 36% within the U.S., so there is great potential for feral hogs to impact this land type and its associated activities. Rangelands are used for livestock grazing, provide suitable habitat for wildlife, and offer a variety of ecosystem services, such as carbon sequestration, reduced soil erosion, and improved water quality. Therefore, damage from feral hogs can have cascading effects across rangeland ecosystems. For example, feral hogs are notorious for rooting, which is detrimental to plants and their root systems as well as soil quality and stability, which can then impact livestock grazing. Rooting is especially damaging near riparian areas, causing an increased risk of soil erosion. Feral hogs also impact water by defecating and urinating in water sources, which can spread pathogens. Interspecies interactions between feral hogs and either livestock or wildlife can also spread disease or even alter animal behavior through direct and indirect routes. Therefore, understanding the impacts of feral hogs on rangeland ecosystems is vital for mitigating their negative impacts.

23. Genetic Modeling of Assisted Migration Strategies for Endangered Ocelot Populations in South Texas

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

Randy DeYoung, Texas A&M-Kingsville CKWRI

Matthew Smith,

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

Abstract: Translocation is an effective recovery strategy for fragmented populations worldwide. Genetic diversity improves long-term translocation success, and as such, gene flow plays a crucial part in population persistence. Lack of gene flow can lead to inbreeding and loss of genetic diversity due to drift. However, the number or frequency of migrants required to prevent genetic erosion are system- and taxa-specific. Texas ocelots (*Leopardus pardalis*) occupy two isolated sites in Cameron and Willacy counties separated by 30 km of a human-dominated matrix. Though dispersal between populations had not been documented in 35 years, 5 individuals have moved between populations since 2017. Despite these recent movements, both populations have lower nucleotide diversity and heterozygosity compared to their Mexican and Central American counterparts. With limited gene flow between the two Texas populations, human-assisted translocation is critical to their recovery. As part of that effort, we will determine how genetic diversity will change in the context of natural dispersal and human-assisted translocation. We will evaluate a series of management scenarios using individual-based genetic simulations. We will assess genetic metrics before and after each simulated scenario to identify an optimal strategy that would maximize genetic diversity and minimize genetic drift. Additionally, we will estimate historical and contemporary effective population sizes to evaluate how well each scenario supports demographic recovery toward historical levels. With the critical state of their genetic diversity, understanding how gene flow can augment further genomic erosion is critical in the management of Texas ocelots and aid in their demographic and genetic recovery.

24. Assessing Habitat Suitability for Swift Fox in the Rita Blanca National Grassland

Jonathan McClellan, Texas Tech University

Katja Bastiaens, Texas Tech University

John Tomecek, NA

Carlos Portillo-Quintero, Texas Tech University

Dana Karelus, Texas Parks & Wildlife Department

Clint Boal, US Geological Survey

Abstract: The swift fox (*Vulpes velox*) has been a species of conservation concern for 30 years. Habitat loss primarily due to prairie-cropland conversion has reduced the fox distribution to 44% of its historic range. In Texas, the species currently inhabits two of the historically occupied 78 counties, wherein Texas Parks and Wildlife Department ranks it as status S1 or “Critically Imperiled”. The existing habitat use information for swift foxes in Texas are derived from VHF telemetry, which can be coarse in location accuracy and limited in sample size. In contrast, contemporary GPS collars sized for swift fox can provide multiple high-resolution locations nightly for up to 200 days; however, small GPS collars automatically detach and must be retrieved to obtain the stored location data. In this cooperative study, we are capturing and GPS collaring swift foxes to determine den locations and collect high-resolution location data. We are combining the location data from retrieved collars (each with over 700 GPS derived locations) with landcover and soil survey data to better understand swift fox habitat use. We will use this analysis to create a habitat suitability map for the species in the Rita Blanca National Grassland (RBNG) with potential expansion to Dallam County and adjacent counties. This will help guide future survey efforts, habitat management, and inform planning for improved connectivity among habitat patches.

25. Effects of Guinea Grass on Northern Bobwhite Diet

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

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

Abstract: Northern Bobwhite (*Colinus virginianus*; hereafter quail) populations have declined across much of their range primarily due to habitat loss driven by changes in land use. In South Texas, Guinea grass (*Megathyrsus maximus*), a non-native species of bunchgrass from subtropical Africa introduced for cattle forage, has become widespread in the Gulf Coast region. Where it occurs, it grows rapidly, shading out native vegetation and altering the structure of the herbaceous layer. It also produces allelochemicals that can inhibit the growth and germination of neighboring plants. Thus, Guinea grass may be altering the native plant community, and therefore food quality and quantity available to quail throughout the year. As a result, the diet composition of quail living in areas dominated by Guinea grass may be different to that of quail living in areas with lower densities of this invasive grass. Because diet composition may affect quail survival, body condition, and reproductive success, it is important to understand how the introduction and spread of Guinea grass affects the dietary composition of quail. This project aims to address the effects of Guinea grass presence on the dietary composition of Northern Bobwhite by quantifying diet components (e.g., different seeds, insects, and plant material) in crops from hunter-donated birds collected in areas with varying amounts of Guinea grass. Results will provide insight into how introduced invasive grasses may be influencing native wildlife through changes in food resources and will support habitat and management decisions that promote sustainable quail populations.

26. Assessment of Wetland Dynamics in the Chihuahuan Desert as Habitats for Migratory Birds

Bryce Mann, Borderlands Research Institute - Sul Ross State University

Daniel Collins, Borderlands Research Institute - Sul Ross State University

Antonio Cantu, Borderlands Research Institute - Sul Ross State University

Maureen Frank, Borderlands Research Institute - Sul Ross State University

Patrick Donnelly, Ducks Unlimited

Abstract: For migratory waterbirds, migration is largely influenced by stopover connectivity and the availability of wetland habitats across flyways. In North America's Central and Pacific flyways, wetland habitats within the Chihuahuan Desert play a key role in supporting migratory birds by connecting breeding grounds to wintering grounds, providing this crucial break during migration. Without the availability of these habitats, migratory birds will face reduced nutrition and increased energy expenditure, affecting their survival and fitness. Globally, arid wetlands are experiencing declines driven by anthropogenic water use and climate change. A deeper understanding of the current status and trajectory of wetlands is needed in order to better inform wetland conservation strategies. In this study, we will assess the spatiotemporal availability of surface water within the Chihuahuan Desert. We will model and analyze wetland habitat availability in the Chihuahuan Desert through time series of surface water extent using satellite remote sensing. Additionally, climate and land use datasets will be integrated to understand factors influencing changes in habitat availability. This study will support the prioritization of areas in the Chihuahuan Desert for migratory waterbird habitat management and conservation. Looking at a broader scale, this study has the potential to be applied to other arid regions across the globe. Additionally, regional results could be applied on a continental scale to inform broader flyway-wide initiatives that are in support of waterbird populations.

27. How do Mule Deer Cope with Drought and Competition in the Trans-Pecos Region, Texas?

Maggie Rector, Borderlands Research Institute - Sul Ross State University

Mark Bell, Borderlands Research Institute - Sul Ross State University

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

Shawn Gray, Texas Parks & Wildlife Department

Justin French, Borderlands Research Institute - Sul Ross State University

Abstract: Invasive species and extreme environmental conditions increasingly threaten native wildlife by intensifying competition and constraining resource availability, potentially forcing species to make costly trade-offs. Mule deer populations in the Trans-Pecos declined to a historic low in 2025, which may be attributed to drought and factors like competition with aoudad. Reversing this decline requires understanding how these stressors and their interactions limit behavioral flexibility and survival. We will investigate responses using GPS collar data collected from 2014 to 2025 representing 6 mule deer populations in the Trans-Pecos region of Texas. We will estimate population-level niches of mule deer based on individual-level habitat selection, estimated using integrated step selection analysis. We will incorporate dynamic information from remotely sensed data to capture the effects of vegetation phenology and changing habitat conditions on resource selection. We will examine changes in individual and population level niches, and specific functional responses in habitat selection under drought conditions, as well as their survival consequences. Given the potential of concurrent pressures of drought and competition, I expect that mule deer populations will be forced to expand to suboptimal habitat, at the expense of increased mortality risk. However, I also anticipate that individuals with greater niche flexibility will display higher survival, highlighting the importance of plasticity in coping with multiple ecological stressors. By identifying strategies mule deer use to cope with limited resources we hope to identify specific management strategies to offset the demographic costs of these tradeoffs, ultimately mitigating future mule deer declines in the region.

28. Effects of Bait Types on Camera Trap Detections of East Texas Animals

Natalie Ransom, Stephen F. Austin State University Student Chapter of The Wildlife Society

Sophia Grubbs, Stephen F. Austin State University Student Chapter of The Wildlife Society

Andrew Moore, Stephen F. Austin State University Student Chapter of The Wildlife Society

Clare Shaughnessy, Stephen F. Austin State University Student Chapter of The Wildlife Society

Meredith Rash, Stephen F. Austin State University

Reuber Antoniazzi, Stephen F. Austin State University

Gabriel Andrade-Ponce, Stephen F. Austin State University

Abstract: Baiting is commonly used to increase animal detections in camera-trap studies, but may introduce non-target effects that alter the observed community. To evaluate how bait type influences detection rates, this study compared species visitation at sites baited with fish heads, sites baited with perfume, and unbaited control sites. The study was conducted at Winston 8 Ranch in East Texas, using twelve cameras deployed from June to September 2024. Visitation rate was calculated as the number of independent records of each species divided by the number of camera operation days. We hypothesized that baited sites would show higher detections than the control sites; that perfume would primarily attract carnivores; that fish sites would attract opportunists and scavengers, and that both baits would deter herbivores. Across the twelve species detected, eleven occurred at fish-baited sites, seven at perfume-baited sites, and five at control sites. Fish heads were the most effective bait overall and did not seem to act as a deterrent to herbivorous species such as deer. Unexpectedly, perfume-baited sites yielded a high quantity of Nine-banded armadillo (*Dasypus novemcinctus*) detections rather than the anticipated carnivores. Additionally, although expected primarily at control sites, which were not baited to attract predators, White-tailed deer (*Odocoileus virginianus*) had a comparable number of observations at both control sites and sites baited with fish heads. Our results showed that baiting camera traps increases the detection rate of species without a detrimental effect on non-target species that inhabit East Texas.

29. Detection of Bats on a Restored Grassland on Fishers Island, NY

Walker Barak, Tarleton State University

Tyler McMahon, Tarleton State University

Heather Mathewson, Tarleton State University

Adam Mitchell, Tarleton State University

Abstract: Bats (Chiroptera) provide important ecological roles in the environment, such as pollination of plants and regulation of insect populations. Bats have been declining in the northeastern USA, often attributed to disease and habitat loss. These declines warrant a need for monitoring bats at local scales to inform management decisions and identify local mechanisms of bat decline. This study aims to document bat occurrences on an island in the Long Island Sound (Fishers Island, NY) undergoing long-term grassland management and invasive plant removal. Surveys are conducted annually on the island to document the plant, arthropod, and avian communities; however, species richness and composition of bat communities remain unknown. We placed two acoustic monitors across seven sites adjacent to freshwater bodies and areas of open, low-lying vegetation for foraging during summer 2025. At each site, we measured vegetation cover and geographic location on the island. We identified bat sound recordings and classified them using SonoBat. Preliminary surveys report the presence of the hoary bat (*Lasiurus cinereus*) and silver-haired bat (*Lasionycteris noctivagans*) on Fishers Island, both of which are recognized as species of greatest conservation

30. Use of Attractants to Increase Discoverability of Wildlife Passages by Mountain Lions

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Michael Cherry, Caesar Kleberg Wildlife Research Institution

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

Matthew Smith, NA

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

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

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Dana Karelus, Texas Parks & Wildlife Department

Grant Harris, U.S. Fish and Wildlife Service

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

Abstract: The ability to move through a landscape is essential to the persistence of wildlife species, yet landscapes are increasingly fragmented by linear infrastructure. Such infrastructure disproportionately affects large carnivores because of their large home ranges, low reproductive output, and low densities. Crossing structures are often used to mitigate the impact of linear infrastructure by increasing barrier permeability and reducing mortality. The USA-Mexico border barrier in South Texas is an anthropogenic barrier that may be impacting movement ecology of large carnivores, notably mountain lions (*Puma concolor*). As a mitigation measure, small wildlife passages – 8"x11" sections cut from the barrier's base – were installed every half mile to increase landscape permeability, but the use of these passages by mountain lions in South Texas is unknown. After a full year of monitoring these passages (May 2024 – October 2025) using 75 camera trap sites, we have no evidence of mountain lions using these crossings. I plan to use visual (e.g., CDs and feathers), auditory (e.g., distressed fawn and rabbit calls), and olfactory (e.g., catnip and valerian oil) attractants to increase the discoverability of crossing structures by mountain lions in South Texas. I predict mountain lions will use crossings more frequently as a result of increased discoverability, and that they will be most attracted by auditory lures because of the role that auditory cues play in prey detection from a distance. These findings will inform efforts to increase the effectiveness of crossing structures and increase habitat connectivity for South Texas mountain lions.

31. Modelling Suitability of Overwintering Habitat for Sandhill Cranes in the Southwest U.S. and Northern Mexico Highlands

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Antonio Cantu, Borderlands Research Institute - Sul Ross State University

Patrick Donnelly, Ducks Unlimited

Daniel Collins, Borderlands Research Institute - Sul Ross State University

Abstract: Sandhill cranes (*Antigone canadensis*) utilize diverse resources (e.g., crops and wetlands) in the southwestern U.S. and northern Mexico during the overwintering period. In this region, cranes often select for resources (particularly agricultural) in proximity to wetlands, which are primarily snow and monsoon driven systems. However, climate change is affecting the arrangement of these systems, which may alter migratory patterns and influence the areas that cranes select for during the overwintering period. This study aims to bridge the knowledge gap of what areas and resources sandhill cranes use over a large landscape in the southwest U.S. and northern Mexico during their wintering period by building a usable habitat suitability model for resource managers to make informed management decisions. Data from 141 GPS-tagged cranes between 2014-present containing approximately five million locations will be used to build the model. We predict that cranes will utilize riparian areas containing seasonal wetlands surrounded by agriculture. We also predict that habitat suitability will increase in closer proximity to wetlands and suitable foraging sites. As snowpack decreases and wetland extent (i.e., wetland footprint) declines, cranes potentially will select areas where wetland extent is maintained or slightly increasing, such as the monsoon driven systems in northern Mexico. As change occurs across the landscape and the issue of water availability becomes increasingly severe, this could lead to lower crop production adjacent to desired wetlands. As migratory patterns change over time, this model may need to be revisited to account for the preferred conditions of newly selected wintering grounds.

32. Assessment of Human Activity and Disturbance on Piping Plover Nesting Habitat

Jose Alvarez, Tarleton State University

Tyler McMahon, Tarleton State University

Heather Mathewson, Tarleton State University

Adam Mitchell, Tarleton State University

Anna White, Fishers Island Conservancy

Abstract: Piping plovers (*Charadrius melodus*) are a federally threatened shorebird that depends on undisturbed sandy beach for nesting habitat during the breeding season. Increased coastal development and recreation along the Atlantic Coast has contributed to habitat loss and vulnerability for piping plovers. The purpose of this study is to assess sources of disturbance to piping plovers during the breeding season on Fishers Island, New York. In collaboration with Fishers Island Conservancy, we established a series of game cameras along public beaches and where piping plovers were reported nesting in summer 2025. The Conservancy placed flagged metal posts connected by strings around nest sites in early June. We define disturbance as the presence of humans, dogs, encampments, or boats. Cameras captured motion-based images at 5s-intervals. At one site we placed 3 cameras and processed data from 4–9 July 2025. Even with placement of the flagged areas, 2 of 3 camera locations were disturbed throughout most of the day on 4–6 July by humans who had a boat and set up camps at both locations. Disturbance on 7–9 July dropped to < 2 .5 hrs/d at 1 camera and no disturbance at the other 2. We are finishing processing photos from other cameras. These results emphasize infrequent but high-intensity disturbances during holidays or potentially weekends in areas where piping plovers nest. Our results will be paired with another study evaluating nest enclosure effectiveness to compare disturbance and enclosure performance in protecting nesting shorebirds.

33. Assessment of Capture-Related Stress in Mesocarnivores and Establishment of Baseline Cortisol Values for Future Stress Indicators in Captive Breeding Programs

Meghan Murphy, East Foundation

Ashley Reeves, East Foundation

Landon Schofield, East Foundation

Lindsay Martinez, East Foundation

Alynn Martin, Caesar Kleberg Wildlife Research Institute

Tyler Campbell, East Foundation

Jason Sawyer, East Foundation

Haylee Pearce, East Foundation

Abstract: Stress can negatively impact animal health, and it is important to evaluate and mitigate stress when handling wild animals, especially with endangered species. We propose to evaluate capture-related stress parameters in wild-caught ocelots (*Leopardus pardalis*), bobcats (*Lynx rufus*), and coyotes (*Canis latrans*) at East Foundation's El Sauz Ranch in Willacy and Kenedy Counties throughout the 2026 trapping season. Our objectives are to determine baseline stress parameters, evaluate if time spent in a box trap correlates with stress indicators, and assess whether repeat captures influence stress levels. Baseline stress will be evaluated by measuring cortisol levels from fecal samples. Stress levels at the time of processing will be determined through behavioral assessment and by measuring cortisol and epinephrine from blood samples. Transmitters will be used to record the precise time of capture and determine the total amount of time in the trap. We expect that repeat capture events of the same individual will decrease capture-related stress levels, and that more time in a trap will increase stress levels. If repeat captures of one individual result in decreased stress levels compared to initial capture, we could alter the existing permit requirement of relocating traps after an individual is re-captured multiple times, maximizing trapping potential. In addition, we could attempt to mitigate stress by reducing the time traps are open overnight. Finally, establishing a baseline for ocelot cortisol levels as an indicator of stress will provide a framework for determining acclimation of wild ocelots relocated to the future Ocelot Conservation Facility for breeding.

34. Activity Change in Mesopredators with Feral Hog Presence in Riparian Corridors in North-Central Texas

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Zachary Bellows, NA

Cameron Starnes, Tarleton State University

Ricky Garibay, Tarleton State University

Heather Mathewson, Tarleton State University

Abstract: Mesopredators such as raccoons (*Procyon lotor*), bobcats (*Lynx rufus*), grey foxes (*Urocyon cinereoargenteus*), and opossums (*Didelphis virginiana*) play an important role in regulating prey populations in riparian ecosystems. However, the presence of invasive species such as feral hogs (*Sus scrofa*) could alter diel activity patterns on mesopredator activity. Behavior of all species also is influenced by human activity. Our study is in two riparian habitats within the Cross Timbers Ecoregion of north-central Texas. Palo Pinto Mountains State Park is rural and has minimal human activity, and the Tarleton Agriculture Center, located on the Tarleton State University rural campus in Stephenville, Texas. We aim to determine whether temporal activity of mesopredators is influenced by the presence of feral hogs in a riparian habitat. We predict that feral hog and mesopredator diel activity will have little overlap due to the territorial and often aggressive behavior of feral hogs. We implemented a game camera survey conducted from September 2024 to September 2025, which utilized collectively over 7,000 trap nights. Each camera was mounted 50-cm above ground, oriented north, and spaced a minimum of 250-m apart. We will analyze diel activity using Timelapse 2.0 and kernel density estimation to calculate the overlap coefficient (Δ), which quantifies the degree of temporal overlap in species activity (0 = no overlap, 1 = complete overlap). Results from this study will inform urban ecologists, managers, and stakeholders about the influence feral hogs have on the temporal activity of mesopredators.

35. Developing Public Comprehensive Reference Networks for Insect Biodiversity from a Restored Maritime Grassland

Jake Davis, Tarleton State University

Tyler McMahon, Tarleton State University

Heather Mathewson, Tarleton State University

Adam Mitchell, Tarleton State University

Abstract: Habitat loss, biological invasions, and land intensification have contributed to global insect declines, with grassland ecosystems being one of the most vulnerable to these disturbances. Insects provide valuable ecosystem services such as pollination, nutrient cycling, and provide a major food resource for wildlife at higher trophic levels. To understand how insects respond to changes in their environment, it is important to observe these changes at refined biological and taxonomic levels. This research project seeks to develop an ongoing, comprehensive reference database accessible to the public of insects and related arthropods on Fishers Island, New York. Our collaborator is Fishers Island Conservancy, a local non-profit that manages a restored maritime grassland focused on removal of invasive plants. We placed pitfall traps across 150 1-m² quadrats in both native and nonnative vegetation assemblages during Summer 2024. We are comparing these findings with an inventory of specimens from previous datasets (2014-2016) and ongoing insect surveys to improve coverage. In 2024, we found over 3,000 specimens from 73 separate insect families. We determined the most common insect was ground beetles (Carabidae), ants (Formicidae), and leaf beetles (Chrysomelidae), highlighting that densities of predators and herbivores are still present post-invasion. We are modeling this database through the program Obsidian to design, format, and publish data in an accessible flowchart, which will provide wildlife biologists and land managers with a resource to evaluate habitat characteristics, predict long-term shifts in biodiversity, and guide future restoration strategies.

36. From Calvin Klein to Carrion: Diel Responses and Conflicts Revealed by Camera Traps

Andrew Moore, Stephen F. Austin State University Student Chapter of The Wildlife Society

Reuber Antoniazzi, Stephen F. Austin State University

Clare Shaughnessy, Stephen F. Austin State University Student Chapter of The Wildlife Society

Gabriel Andrade-Ponce, Stephen F. Austin State University

Sophia Grubbs, Stephen F. Austin State University Student Chapter of The Wildlife Society

Natalie Ransom, Stephen F. Austin State University Student Chapter of The Wildlife Society

Meredith Rash, Stephen F. Austin State University

Abstract: Camera traps are helpful tools for passively monitoring patterns in animal activity and interactions. Different bait types can affect the foraging activity of animals. In this research, we evaluated the potential interactions among species using different baits, i.e., perfume Calvin Klein Obsession, a well-known attractant for wild cats, fish heads, and no baits (control). We analyzed the diel activity patterns of mammal communities in a managed Pineywood forest in East Texas. White-tailed deer (*Odocoileus virginianus*), raccoons (*Procyon lotor*), armadillos (*Dasypus novemcinctus*), and Virginia opossums (*Didelphis virginiana*) were recorded in each treatment at different times of the day, revealing that baits could be shaping their activity patterns. Armadillos and Virginia opossums were consistently observed at the fish stations shortly before Coyote (*Canis latrans*), potentially displaying avoidance behavior. Direct conflict between turkey vultures (*Cathartes aura*) and black vultures (*Coragyps atratus*) was observed while both species were attracted to and feeding at the fish head station. Turkey vultures showed a tendency to leave while the black vultures were present and return when the black vultures left, resulting in a bimodal curve for turkey vultures and a unimodal curve for black vultures when graphing activity patterns by species and treatment. Raccoons, which possess a dietary strategy of opportunistic omnivory, were not commonly observed at the fish stations, but were observed at the control station both early in the morning and at night, confirming their presence in the area. These observations highlight activity patterns such as predator-prey dynamics, opportunistic feeding, and competition in animal communities.

37. A Comparison of Home Range Size for the Swift Fox in Northwest Texas

Katja Bastiaens, Texas Tech University

Jonathan McClellan, Texas Tech University

John Tomecek, NA

Kerry Griffis-Kyle, Texas Tech University

Dana Karelus, Texas Parks & Wildlife Department

Clint Boal, US Geological Survey

Abstract: The swift fox (*Vulpes velox*) is a small nocturnal mesocarnivore endemic to the great plains. Due to habitat loss primarily caused by prairie to cropland conversion, the swift fox has been a species of conservation concern for the last 30 years. The swift fox now only inhabits 44% of its historic range across the great plains. Texas Parks and Wildlife Department (TPWD) ranks the species as status S1 or “critically imperiled” as it only inhabits two of the 78 historic counties in the state. In the winter of 2024-2025 we collared 5 swift foxes with GPS data logging collars on the Rita Blanca National Grasslands, located in Dallam County, Texas; we have recovered two collars to date. We used a 95% adaptive kernel density to estimate and compare the home range sizes for these two female foxes, and compared these high resolution home range sizes to those derived from VHF telemetry at the study area in previous studies. Additionally, clusters in the GPS data were used to identify number of den sites within each home range. However, because our data are limited to two individuals from the first season of trapping, this is a preliminary and exploratory comparison. Plans for a second season of trapping will increase our sample size to aid TPWD in making conservation decisions on the swift fox.

38. An Assessment of Carnivore Interspecific Competition and Density in an Endangered Felid Reintroduction Landscape

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

Tavis Forrester, Rocky Mountain Research Station, U.S. Forest Service

Landon Schofield, East Foundation

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

Abstract: Reintroduction is an increasingly common management tool used for endangered species recovery efforts, but information on wildlife communities prior to reintroduction is often lacking. Understanding how carnivore guilds partition resources is critical to guiding future reintroduction efforts, especially considering these guilds often have substantial overlap in ecological requirements. Our proposed research will (1) quantify spatial and temporal partitioning among coyotes (*Canis latrans*), bobcats (*Lynx rufus*) and federally endangered ocelots (*Leopardus pardalis*) in South Texas, USA, and (2) identify efficient density estimation approaches to support long-term monitoring. For aim one, we will deploy GPS radio-collars on ocelots, bobcats, and coyotes at two study sites, one site with and one site without ocelots, to determine broad-scale spatial partitioning of collared individuals via home range overlap and finer-scale partitioning by evaluating spatiotemporal interactions. We will also quantify temporal overlap using remote camera traps. For aim two, we will estimate carnivore densities using unmarked spatial count, partially-marked spatial mark-resight, and fully-marked spatial capture recapture frameworks (the latter for bobcat and ocelot only). We will compare these approaches in terms of logistical efficiency and estimation precision. We expect that, where ocelots are present, coyote and bobcat home ranges will expand and their temporal activity patterns will shift to reduce overlap with ocelots. We anticipate that spatial mark-resight will offer the best balance of flexibility, logistical efficiency, and estimation precision, in our study system. These findings will help inform reintroduction strategies and further recovery goals of a federally endangered felid.

39. Wood Duck Habitat Selection and Range Expansion in North-Central Texas

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Chloe Delahoussaye, Tarleton State University

Cameron Starnes, Tarleton State University

Heather Mathewson, Tarleton State University

Abstract: Riparian areas provide resources for several species throughout the year. The wood duck (*Aix sponsa*) is a species that depends on riparian areas year around. There is some concern that wood duck populations are declining; however, we have seen an increase in presence at our study area in north-central Texas. Our study site, the 1,971-ha Palo Pinto Mountains State Park, in the Cross Timbers Ecoregion, is a grassland shrub landscape with narrow intermittent and ephemeral streams. The riparian area along the streams consists of mature hardwoods, encroached Ashe juniper (*Juniperus ashei*), and several snags that offer nesting structures for wood ducks. In 2020 we began a restoration project along the streams after removal of Ashe juniper. In April 2023, we observed a breeding pair of wood ducks on Palo Pinto Creek for the first time. In that same year we began surveying and monitoring waterbird populations throughout the year using 13 trail cameras. Using our data and supplemental eBird data, our objective is to examine whether these occurrences are random or are following a trend of range expansion. We also will evaluate environmental factors that could suggest seasonal patterns of occurrence of wood duck at our study site. Our research seeks to evaluate landscape-level responses to the restoration work but before we can contribute it as a cause for increase wood ducks in the area, we must evaluate the possibility of population range expansion or random occurrences.

40. Effects of Installing Symbolic Fencing Around Piping Plover Nesting Sites on Fishers Island, NY

Emma Clarke, Tarleton State University

Tyler McMahon, Tarleton State University

Anna White, Fishers Island Conservancy

Heather Mathewson, Tarleton State University

Adam Mitchell, Tarleton State University

Abstract: Piping plovers (*Charadrius melodus*) are federally threatened migratory shorebirds that are found on the Atlantic coast and the Great Lakes during their summer nesting season. They are currently listed as endangered in the state of New York because of disruption to and loss of the sandy stretches of beach required for nesting. Piping plovers are an indicator species for coastal regions due to their sensitivity to changes in their ecosystems. In 2024, Fishers Island Conservancy (FIC) began work with the New York State Department of Environmental Conservation to increase nesting success on Fishers Island, New York, a 14-km long island 3 km off the coast of Connecticut. They monitored 6 protected areas of state-owned beaches across the island in 2024. In 2025 they implemented symbolic fencing (metal poles connected by strings) and signage at nest locations at 3 of the 6 areas. The fencing does not exclude predators but aims to prevent human disturbance of the area. The FIC recorded the number of nests found at each area, and the number of chicks hatched and fledged for each nest. Using one-way ANOVA, we found no difference in any reproductive metric with and without symbolic fencing. Our team and FIC will continue to monitor plover nests at these beaches and evaluate strategies to deter human disturbance to nesting piping plovers.

41. Modeling the Effectiveness of the Electrification of Spin Cast Feeders as a Deterrent for American Black Bears

Jake Gowdy, Borderlands Research Institute - Sul Ross State University

Louis Harveson, Borderlands Research Institute - Sul Ross State University

Matt Hewitt, Borderlands Research Institute - Sul Ross State University

Amanda M. Veals Dutt, Borderlands Research Institute - Sul Ross State University

Abstract: Human-bear conflict is an emerging issue in the Trans-Pecos region of Texas due to the recent recolonization of once extirpated black bears (*Ursus americanus*). Bears are known to take advantage of anthropogenic resources when available. The Trans-Pecos exhibits a high availability of these resources (e.g., wildlife feeders), which presents a unique opportunity to understand the influence on bear behavior, population recolonization, and human conflict. When bears consistently use anthropogenic resources, they tend to associate humans with food resources and lose their fear of people, leading to increased human-bear conflict. The Texas Parks and Wildlife Department has explored methods for restricting bear access to wildlife feeders, but the adaptability and persistence of bears have resulted in limited success. Two deterrent methods have been tested previously: electric fence enclosures and electrification of the feeder structure. Electric fence enclosures work in limited capacity with large amounts of interindividual variation, while electrifying the feeder structure has, anecdotally, been more effective. We plan to expand this research by using trail cameras and a binomial regression model to explore how electrification of the feeder structure and presence or absence of feed effects the probability of a bear successfully acquiring a food reward from spin-cast style feeders. Preventing black bear access to anthropogenic food resources is necessary to reduce human-bear conflict, including property damage and human-bear contact, while encouraging natural foraging behavior. Finding effective ways to prevent access to common attractants, such as feeders, will be critical for long-term bear conservation and management in the Trans-Pecos.

42. Migratory Routes and Migration Characteristics of Zone-Tailed Hawks that Nest in West Texas

Will Britton, Texas Tech University

Clint Boal, US Geological Survey

Brent Bibles, Unity College

Sarah Montalvo, Texas Tech University

Tania Homayoun, Texas Parks & Wildlife Department

Abstract: Zone-tailed hawks (*Buteo albonotatus*) are neotropical migrant raptors whose range reaches its northernmost extent in Texas and other southwestern states. Significant knowledge gaps exist in the ecology of this species, including their movement ecology throughout the year. Migratory bird species present a complex conservation challenge because their breeding, migratory, and winter ranges can cover a variety of ecoregions and span multiple countries. To study the migratory movements of zone-tailed hawks, we captured adults of the species at nest sites in the Chihuahuan Desert and western Edwards Plateau ecoregions in Texas during the breeding seasons from 2021 to 2025. We outfitted eight adult zone-tailed hawks with GPS or GPS/GSM satellite transmitters programmed to collect multiple locations daily year-round. We collected telemetry data representing 10 spring migrations and 17 fall migrations. The hawks we tracked travelled up to 3,400 km and wintered from southern Mexico to central Panama. All individuals with more than one year of data have demonstrated fidelity to both summer and winter home ranges. Analyses will assess migration routes, breeding area arrival and departure dates, migration distances, movement rates, and other migration characteristics. Previous to our study, migration behavior of zone-tailed hawks was unknown. Our results are providing new information that will facilitate an improved understanding of zone-tailed hawk migration ecology, determine seasonal habitat associations, help identify potential conservation concerns associated with migration, and allow for comparison to other zone-tailed hawk populations within the northern extent of the range if similar studies are conducted.

43. Seasonal Variation of Nutritive Value and Mineralogy of Five Native Grass Species in the Texas High Plains and Rolling Plains

Jesse Haudrich, Texas Tech University

Shaelyn Rainey, Texas Tech University

Alice Mathew, Texas Tech University

Aaron Norris, Texas Tech University

Caitlyn Cooper-Norris, Texas Tech University

Abstract: Effective forage management for both livestock and wildlife managers requires a clear understanding of seasonal nutritional and mineral dynamics of forage species. While previous research has explored some mineral concentrations and general nutritional trends in native forages, few studies have focused on species-specific seasonal dynamics, particularly within the Texas High and Rolling Plains regions. This study investigates the nutritional and mineral dynamics of five predominant native grass species in the Texas High and Rolling Plains. Sampling sites include two locations near Paducah, TX (Rolling Plains), and one location near New Deal, TX (High Plains). All sampling locations are upland sites characterized by sandy loam or loamy soils. The following species were chosen based on ecological importance and prevalence in regional grazing systems: blue grama (*Bouteloua gracillis*), buffalograss (*Bouteloua dactyloides*), sand dropseed (*Sporobolus cryptandrus*), sideoats grama (*Bouteloua curtipendula*), and silver bluestem (*Bothriochloa laguroides*). Vegetation was collected by grab sampling to represent the grazing behavior of domestic livestock. Data collection and analyses have been completed from June to October 2025, with collections planned to continue through May 2027. All monthly samples will be analyzed for crude protein, acid detergent fiber, and in vitro digestibility. Additionally, mineral composition will be analyzed seasonally— in July, October, January, and April. The results from this study will provide regionally specific, species-level data that can guide land managers in making better-informed decisions to help optimize forage use and bridge potential nutritional gaps throughout the year.

44. **Predator-Prey Interaction in Riparian Habitats in North-Central Texas**

Abigail Durham, Tarleton State University

Ricky Garibay, Tarleton State University

Cameron Starnes, Tarleton State University

Zachary Bellows, NA

Heather Mathewson, Tarleton State University

Abstract: Understanding interspecific interactions, particularly between predator and prey species, is important for wildlife management in riparian ecosystems, especially in north-central Texas, where riparian ecosystems provide essential resources (e.g., water, food, and cover). We aim to investigate diel activity patterns, which is the pattern of behavior in a 24-hour period, of mammalian predators and prey at two riparian sites, Palo Pinto Mountains State Park in Strawn, Texas and the Tarleton State University Agricultural Center in Stephenville, Texas. Our objective is to assess temporal overlap and examine whether predator diel activity influences prey diel activity within riparian corridors. To study their activity, we conducted a game camera survey from September to November 2025, using > 2,000 trap nights. We placed 30 randomized cameras between both sites, with each camera positioned 51 cm above the ground, pointed north, and at least 250 m apart. We will analyze diel activity patterns using Timelapse 2.0 and kernel density estimation to calculate the overlap coefficient (Δ), which quantifies the degree of temporal overlap in species activity (0 = no overlap, 1 = complete overlap). We hypothesize that predator and prey species exhibit distinct activity patterns to minimize encounters, predicting diurnal prey activity in sights with high predator detection. Results will inform how interactions influence wildlife activity with implications for conservation and management of Texas's riparian resources.

45. Investigating the Effectiveness of Droplet Digital PCR (ddPCR) for Detecting Species of Greatest Conservation Need (SGCN) In Texas

Matthew Blow, University of Texas at Tyler

Jace Douglas, Univ

James York, Texas Parks & Wildlife Department

Marsha Williams, University of Texas at Tyler

Lance Williams, University of Texas at Tyler

Archis Grubh, Texas Parks & Wildlife Department

Matthew Greenwold, University of Texas at Tyler

Abstract: Species of Greatest Conservation Need (SGCN) is a designation assigned by each state to organisms that may be data deficient in regard to their distribution or population status or listed as threatened or endangered. Here in Texas, Texas Parks and Wildlife Department (TPWD) has created a State Wildlife Action Plan (SWAP) which is a framework to conserve and restore habitats of SGCN by directing research, management, and recovery of these species. This presentation will discuss the use of environmental DNA (eDNA) and droplet digital PCR (ddPCR) for the detection of mayfly and crayfish species listed as SGCN. Recent studies have shown that droplet digital PCR (ddPCR) is better at detecting lower quantities of DNA when compared to quantitative PCR (qPCR). Droplet digital PCR utilizes oil emulsification of a standard PCR reaction mixture to form upwards of 10,000 discrete reactions. This allows for the dilution of PCR inhibitors and the potential for direct quantification using a Poisson distribution. Specifically, we will discuss issues associated with eDNA detection of mayflies using species-specific primers and qPCR and how ddPCR may increase the sensitivity of the assay. Additionally, we describe the methodology behind developing a multiplex primer-probe ddPCR assay for detecting two sympatric crayfish from the *Procambarus* genus.

46. Species-Specific Responses to Olfactory, Visual, and Auditory Attractants in a South Texas Carnivore Community

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

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

Abstract: Predator species play a critical role in maintaining healthy ecosystems, yet their elusive nature makes studying their behavior in the wild challenging. Many carnivores use a combination of senses—sight, smell, and sound—when foraging, and wildlife researchers have developed various lures to exploit these senses. Understanding predator responses to different attractants can assist land managers in identifying species present on a property and inform strategies to mitigate livestock predation. This study, conducted at South Pasture, a natural rangeland managed by Texas A&M University–Kingsville, will examine how olfactory, visual, and auditory attractants influence predator activity. Target species include coyote (*Canis latrans*), bobcat (*Lynx rufus*), and gray fox (*Urocyon cinereoargenteus*). Trail cameras will be deployed in areas likely to be frequented by carnivores, such as game trails, intersections, and suspected den sites. Attractants will consist of commercially available scent lures (olfactory), CDs on strings (visual), and speakers broadcasting prey distress calls (auditory). Phase one of the project will be a four-week pilot with 10 cameras, including one week without lures and one week for each lure type. Phase two will expand to 20 cameras over two months, with two-week periods for each treatment. Although data collection is ongoing, preliminary observations will help determine species-specific responses to different sensory cues. These findings are expected to improve predator population assessments and provide insight into which attractants are most effective for different carnivore species.

47. The Use of Livestock Guardian Dogs for Swift Fox Conservation

Haley Sloan, Texas A&M University - College Station

John Tomecek,

Clint Boal, US Geological Survey

Dana Karelus, Texas Parks & Wildlife Department

Abstract: The swift fox (*Vulpes velox*) is a short-grass obligate species that ranges from southern Canada to Texas. In Texas, swift foxes historically occurred in 79 counties throughout the Texas Panhandle and west Texas. Currently, the species only occurs in Dallam County with an estimated population of about 50-250 individuals. Predation by coyotes (*Canis latrans*) has been identified as a key cause of mortality for swift foxes. Attempting to curb this, coyotes are often culled in areas where swift foxes persist. Despite these efforts, swift foxes continue to decline. Recently, livestock guardian dogs (*Canis familiaris*; LGD) have been proposed as a potential solution to this predation. LGDs have been used for centuries in Asia and Europe, and more recently in Africa, Australia, and North America, to reduce predation on livestock. Given that swift foxes and cattle (*Bos taurus*) tend to co-occupy shortgrass prairies, there may be a value-added benefit to the presence of LGDs with cattle where swift foxes exist. Thus, our goal is to determine if LGD presence in areas with swift foxes is correlated with an increase in swift fox space use and survival, and decreases the use of such spaces by coyotes. We will deploy 2 pairs of LGD, affixed with GPS collars, among cattle grazed on various units in the Rita Blanca National Grassland in northern Texas. We will compare the collected spatial and temporal data of the LGDs with those collected from collared coyotes and swift foxes across the years of this study.

48. Does Supplemental Feeding Affect Population Estimates of White-Tailed Deer?

Brianna Imel, Texas A&M University - Kingsville

Abstract: Obtaining accurate population estimates is essential for effective management of wildlife species. Many methods have been developed with recent emphasis on non-invasive methods such as trail cameras and drones. There are many factors that can affect population estimates, including the distribution of focal species. Supplemental feeding, which is a common practice in Texas, results in the congregation of white-tailed deer, but is unknown whether this behavior affects population estimates. This study will use nighttime thermal drone surveys and time-lapse trail cameras to determine if the application of supplemental feeding has an effect on population density estimates of white-tailed deer. The surveys will be conducted on the 102-ha game-proof fenced pasture in Kingsville, Texas. Two timed feeders will be programmed to dispense shelled corn for 15 minutes in the evening, an hour prior to sunset, for a period of 10-14 days followed by cessation for 10-14 days. This schedule will be repeated from November 2025 to February 2026. Nighttime drone surveys will be conducted during the last night of each feeding trial, and camera surveys will be conducted continuously. Distance sampling methods will be used to generate drone-based population density estimates. Trail camera photographs will be analyzed using the space-to-time model. It is predicted that population estimates during the feeding periods will be lower than population estimates during the cessation of feeding. The results of this study will aim to expand current knowledge regarding the reliability of drone and camera surveys for wildlife population density estimates under different deer management scenarios.

49. How do Different Community Assemblages Shape Prey Partitioning Among South Texas Mesocarnivores

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

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

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

Andrea Montalvo, East Foundation

Matthew Smith,

Abstract: Competition shapes how animal communities are assembled, but these interactions vary across landscapes with changes in the availability and aggregation of resources and competitors. Consequently, changes in the environmental context can have pronounced effects on community structure and play a role in population stability and species coexistence. In South Texas, USA, there are two areas where ocelots (*Leopardus pardalis*) occur alongside bobcats (*Lynx rufus*) and coyotes (*Canis latrans*), whereas other areas are inhabited solely by bobcats and coyotes. This natural variation in competitors and environmental conditions enables comparative analyses of how competition influences dietary niche overlap and foraging strategies. Importantly, we will be comparing dietary niche overlap within the only two ocelot populations in the United States and within a third prospective ocelot reintroduction site to determine the influence of interspecific competition on shaping dietary breadth. We will analyze stable isotopes ($\delta^{13}\text{C}$ and $\delta^{15}\text{N}$) from bobcats, coyotes, and ocelots, as well as dietary items, to compare niche size and overlap. In addition, we will estimate proportional diets using a Bayesian hierarchical mixture model. We expect bobcats and coyotes to reduce their overall niche size and shift in their proportions of prey across sites due to ocelot presence. Through this work, we will clarify how mesocarnivores partition limited resources and reduce competitive interactions. Importantly, ocelot viability in the United States remains uncertain, and this research will help identify population-level dietary patterns and help managers understand the role of competition in shaping persistence of an endangered species.

50. Does Supplemental Feeding Affect Population Estimates of White-Tailed Deer?

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

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

Abstract: Obtaining accurate population estimates is essential for effective management of wildlife species. Many methods have been developed with recent emphasis on non-invasive methods such as trail cameras and drones. There are many factors that can affect population estimates, including the distribution of focal species. Supplemental feeding, which is a common practice in Texas, results in the congregation of white-tailed deer, but is unknown whether this behavior affects population estimates. This study will use nighttime thermal drone surveys and time-lapse trail cameras to determine if the application of supplemental feeding has an effect on population density estimates of white-tailed deer. The surveys will be conducted on the 102-ha game-proof fenced pasture in Kingsville, Texas. Two timed feeders will be programmed to dispense shelled corn for 15 minutes in the evening, an hour prior to sunset, for a period of 10-14 days followed by cessation for 10-14 days. This schedule will be repeated from November 2025 to February 2026. Nighttime drone surveys will be conducted during the last night of each feeding trial, and camera surveys will be conducted continuously. Distance sampling methods will be used to generate drone-based population density estimates. Trail camera photographs will be analyzed using the space-to-time model. It is predicted that population estimates during the feeding periods will be lower than population estimates during the cessation of feeding. The results of this study will aim to expand current knowledge regarding the reliability of drone and camera surveys for wildlife population density estimates under different deer management scenarios.

51. Summer Inventory of Landbirds in Kenai Fjords National Park

Mack Hughes, Tarleton State University

Sadie Ulman, Kenai Fjords National Park

Ashley Long, Texas A&M University - College Station

Heather Mathewson, Tarleton State University

Abstract: Bird populations are declining worldwide due to habitat loss, climate change, and other anthropogenic disturbances. In Alaska, warming temperatures and shifts in vegetation communities have transformed the landscape, leading to population declines and altered species distributions. Kenai Fjords National Park, in south-central Alaska, encompasses two major avifaunal biomes separated by the Harding Icefield, which sustains numerous glaciers. Since 1983, glaciers in this region have receded, potentially creating new nesting and foraging areas for landbirds. Climate models project continued shifts in the park's bird communities as environmental changes accelerate. A comprehensive inventory of landbird species, including densities, distributions, and habitat associations, was conducted at the park in June 2005. However, the bird communities have not been reassessed in the 21 years since. Our research will replicate the 2005 survey in June 2026 to evaluate changes in landbird populations and species assemblages over time. In addition to the original methods, which included point counts and concurrent habitat surveys, we will deploy acoustic monitors to test their effectiveness for long-term monitoring in our remote study area. Understanding how the bird communities are changing at Kenai Fjords National Park is critical for informing future management and conservation strategies for this unique ecosystem.

52. Development of Novel Environmental DNA Methods to Detect Bumble Bee Presence on Floral Resources

Ryan Ament, Tarleton State University

Hannah Atkinson, Tarleton Student Chapter of The Wildlife Society

Addison Singleton, Tarleton State University

Ty Cospers, NA

Heather Mathewson, Tarleton State University

Jeff Brady, Texas A&M AgriLife Research

Adam Mitchell, Tarleton State University

Abstract: Pollinating insects provide a valuable ecosystem service in Texas but exhibit rapid population declines on a global scale. Efforts to monitor pollinator health, biodiversity, and range shifts have become increasingly important for informing future conservation efforts in the state. Historical surveys of bumble bees (*Bombus* spp.) in Texas demonstrate decreased populations and geographic ranges, including the possible extirpation of the variable cuckoo bumble bee (*B. variabilis*). Our study aims to utilize novel environmental DNA (eDNA) tools to identify bumble bee visitation on flowers collected across the state of Texas, focusing on *B. variabilis* and its hosts, the American bumble bee (*B. pensylvanicus*) and sonoran bumble bee (*B. sonorus*). We are creating a 28S ribosomal gene library of *B. variabilis*, its hosts, and three congeners (*B. fraternus*, *B. griseocolis*, and *B. impatiens*) reported in the state with sequences based on specimens from field surveys and museum collections. For our environmental medium, we collected flowers of known plant hosts for bumble bees across Texas in the spring, summer, and falls 2024-2026 within 14 study clusters distributed across the state. We will develop primers to detect *Bombus* DNA using dPCR to identify presence and abundance of *Bombus* species of interest and improve known distribution maps and conservation status in Texas. We hope to provide evidence to support use of eDNA as an effective, non-lethal method to detect cryptic species across Texas and inform conservation efforts.

53. Assessing Medium- To Large-Sized Mammal Communities Across a Texas Urban-Rural Gradient

Else Praasterink, Texas A&M University - College Station

Ty Werdel, Texas A&M University - College Station

Roel Lopez, Texas A&M University Natural Resources Institute

William Rogers, Texas A&M University - College Station

Marcus Blum, Texas A&M University - College Station

Abstract: Urban development is one of the leading global drivers of fragmentation and wildlife biodiversity loss. Though more than half of earth's human population lives in cities, the effects of urban development on mammal communities are yet to be fully understood. Texas is home to several of the fastest growing cities in the U.S., providing the opportunity to investigate the influence of urbanization on mammal diversity and inform future conservation. The primary objective of our research is to evaluate how urban infrastructure influences medium- to large-sized mammal occupancy and community composition. The secondary goals are to determine how human population densities affect these species and how this knowledge can inform future development for conservation. We deployed 40 non-invasive game cameras over a 50-kilometer transect through College Station and Bryan, Texas centered on the Texas A&M campus. Transect points were placed in urban, suburban, rural, rangeland and agricultural areas with different degrees of human population density and land-use. We will derive landscape variables within a 1000m buffer surrounding each camera point using National Agriculture Imagery Program (NAIP) to quantify habitat composition, fragmentation patterns, and proximity to key resources. Preliminary results suggest that an increase in development and human population density decrease mammal diversity. Similar data from Dallas, Houston, and Austin are used to support the understanding of these dynamics. This research will provide a framework to inform future conservation plans and aid the restoration of mammal diversity in rapidly urbanizing regions.

54. Effects of the Us-Mexico Border Wall on Landcover in the Lower Rio Grande Valley, Texas

Reece Allen, Texas A&M University - College Station

Ty Werdel, Texas A&M University - College Station

Daniel Scognamillo, Texas A&M University Natural Resources Institute

Humberto Perotto-Baldivieso, Texas A&M University - College Station

Abstract: The border between the United States and Mexico has undergone a rapid transformation in recent decades, as federal efforts have intensified to construct a continuous physical barrier. Barrier installations constructed along the southmost tip of Texas, a 240 km-wide strip of land known as the Lower Rio Grande Valley (LRGV), are of particular concern as the region includes many rare and vulnerable wildlife species, some of which do not occur elsewhere in the United States. The LRGV has undergone extensive land modification over the past century, resulting in a loss of over 90% of woodland area since the 1930's. Recent projections suggest the human population in the LRGV will double by 2050. The combined effects of barrier construction and urbanization may result in increased habitat loss and landscape fragmentation. To date, no studies have been published that have examined the effects of the US-Mexico border barrier on landcover composition and configuration. We developed a landcover classification from satellite imagery for 2004 and 2024, before and after most barrier structures were constructed, respectively. We analyzed landscape metrics at increasing distances from barrier infrastructure to elucidate whether landscape composition and configuration changed due to barrier installations or were caused by other disturbances (e.g., urbanization). We hypothesize that barrier infrastructure has deleterious effect to structural connectivity, but that these effects decrease with increasing distance from the barrier. Our analysis will help inform conservation priorities and decision making in the LRGV by furthering our understanding of the relationship between border barriers and landcover change.

55. Grazing Across Time: Evaluating Long-Term Vegetation Changes in Desert Grasslands Under Continuous and Rotational Livestock Systems

Sarah Jane Gilbert, Borderlands Research Institute - Sul Ross State University

Carlos Gonzalez, Borderlands Research Institute - Sul Ross State University

Silverio Avila, Texas A&M Agrilife Extension

Clifton Albrecht, Sul Ross State University

Abstract: Desert grasslands of the Northern Chihuahuan Desert support diverse wildlife communities, including native pronghorn (*Antilocapra americana*) and grassland birds that depend on perennial grasses, structural heterogeneity, and open habitat. These ecosystems are susceptible to disturbance due to low and highly variable precipitation, soil type, and slow vegetation recovery. Historic land use and climatic stress have contributed to declines in perennial vegetation, increased bare ground, and shifts toward woody or unpalatable species, which alter habitat structure. Livestock grazing management influences vegetation structure and composition through intensity, frequency, and distribution. Yet, long-term comparisons between rotational and continuous systems are limited in desert grasslands, where short-term studies may overlook gradual vegetation change. This study compares vegetation data collected in 2009 and 2025 under rotational and continuous grazing at the 4,391-ha Mimms Ranch in Presidio County, Texas. Thirty-eight permanent transects distributed across grazing treatments, including paired ungrazed exclosures, were sampled using standardized methods to quantify soil surface cover, herbaceous species composition, and erosion indicators. Our research objectives include assessing long-term vegetation cover, community composition and soil surface changes under different grazing systems (rotational, continuous, and no grazing) to evaluate relationships between perennial grass cover, species richness, bare soil, and erosion in the Northern Chihuahuan Desert grasslands. Results will improve understanding of vegetation dynamics, erosion risk, and ecological stability to inform grazing management strategies that balance ecological function and wildlife conservation in arid grasslands.

56. White-tailed Deer Activity in Suburban and Rural Riparian Habitats

Sage Barmettler, Tarleton State University
Ricky Garibay, Tarleton State University
Cameron Starnes, Tarleton State University
Zachary Bellows, NA
Heather Mathewson, Tarleton State University

Abstract: Understanding the temporal activity of wildlife is important for the effective management of species that depend on riparian ecosystems for seasonal resources. Urbanization is rapidly increasing across Texas, resulting in urban sprawl into once rural landscapes. White-tailed deer (*Odocoileus virginianus*), a species of recreational significance, has demonstrated adaptability to urban landscapes. Our objective is to compare white-tailed deer activity in two riparian habitats within the Cross Timbers Ecoregion of north-central Texas: one at Palo Pinto Mountains State Park, a rural, protected site in Strawn, Texas, and the other at Tarleton Agriculture Center in Stephenville, Texas, a suburban area and an actively used research site. We predict that white-tailed deer in the suburban area will more nocturnal and less active during the day due to human activity, and deer in the rural areas will be crepuscular. We deployed 30 camera traps between both sites from September to November 2025, generating over 1,800 trap-nights. We mounted each camera 50- cm above ground, oriented north, and spaced a minimum of 250- m apart. We will analyze diel activity using Timelapse 2.0 and kernel density estimation to calculate the overlap coefficient (Δ), which quantifies the degree of temporal overlap in species activity (0 = no overlap, 1 = complete overlap). Our findings will inform urban ecologists, managers, and stakeholders about activity changes and behaviors in riparian habitats.

57. Year-Round Seasonal Variation Effects on Scaled Quail Movement Behavior in the Trans-Pecos

Hayley Shultz, Borderlands Research Institute - Sul Ross State University

Abstract: The scaled quail (*Callipepla squamata*) is a non-migratory, ground-dwelling game bird facing a population decline across much of its native range, due largely to habitat loss. In the Trans-Pecos, the movement of scaled quail at an annual and daily scale is understudied. The aim of this project is to monitor scaled quail movement for a full year beginning April 2025 and evaluate how seasonal variation influences movement behaviors. We captured quail utilizing walk-in funnel traps are set near supplemental feeders on a 10,908-ha private ranch in Brewster County, TX. Traps are baited with scratch grain and milo 2 hours before sunrise and sunset and checked within 2 hours to avoid heat stress related mortality. All trapped individuals receive a unique aluminum serial leg band and will be weighed. Measurements of the beak, wings, tail, and tarsus will be recorded. Lotek Global Positioning System (GPS) satellite backpacks are deployed on a smaller subset of quail and set on a 4-hour interval, taking 6 points in a 24-hour period. Failure of movement after 16 hours will result in a mortality signal. Since April 2025, 96 quail have been captured, measured and banded. 29 GPS tags were originally deployed, with 8 being retrieved from mortalities and redeployed, resulting in a total of 37 individuals contributing GPS data. Using an autocorrelation function of step lengths, emergent cyclic patterns can be identified corresponding with seasonal shifts. These findings outline a framework for annual management strategies based on seasonally driven spatial behavior instead of human assumption.

58. The Influence of Breeding Effort by Female Northern Pintails on Performance During Autumn Migration and Winter.

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

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

Jordan Giese, Caesar Kleberg Wildlife Research Institute

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

Kevin Kraai, Texas Parks & Wildlife Department

Bart Ballard, Texas A&M University - Kingsville

Abstract: Over the past four decades, northern pintail (*Anas acuta*) populations have remained below management objectives established by the North American Waterfowl Management Plan, which aims for more than four million individuals. Current surveys estimate the population at roughly half that goal. While multiple factors likely contribute to this long-term decline, few studies have examined how a female's breeding effort influences her performance and survival in subsequent seasons. Our proposed study investigates potential carry-over effects of breeding effort on later stages of the annual cycle. Using movement and accelerometer data from female pintails marked with tracking devices, we will evaluate relationships between breeding variables (e.g., clutch size, incubation duration, nest attempts, etc.) and subsequent migration and winter performance metrics (e.g., travel rate, foraging time, and survival). We predict that females experiencing low breeding effort, such as those that fail early or do not nest, will exhibit more efficient migration performance. Understanding these carry-over effects will enhance our ability to identify key resource needs throughout the annual cycle and inform future management and conservation strategies for northern pintails.

59. Rio Grande Wild Turkey Summer Roosting Habitat Selection on Kerr Wildlife Management Area

Ian Mack II, Tarleton State University

Justin Foster, NA

Joshua Vasquez, Texas Parks and Wildlife Department

Warren Conway, Texas Tech University

Heather Mathewson, Tarleton State University

Abstract: Roosting habitat is critical for the ecology and persistence of many bird species but is often overlooked when evaluating habitat requirements. Inadequate roost sites can increase predation, lower reproductive success, or cause emigration. Roosting habitat use and selection are an understudied component of Rio Grande wild turkey (*Meleagris gallopavo intermedia*) ecology in Texas. Recent surveys indicate declines in turkey abundance in parts of the Edwards Plateau Ecoregion, historically a stronghold, and changes in the structural and spatial distribution of roosting habitat may be contributing to this decline. We are examining roost site characteristics from GPS-marked turkeys to better understand summer roost site selection. In February 2025, we captured, banded, and deployed transmitters on 11 turkeys (10 female, 1 male) at Kerr Wildlife Management Area near Hunt, Texas. We used nighttime GPS locations from June to August 2025 to define potential roost trees, and we collected vegetation data in September 2025. Using ArcGIS Pro, we created 250-m buffers to identify unique roosting areas and selected the roost tree nearest each buffer's geographic center plus two additional randomly selected roost trees. At each roost tree, we measured diameter-at-breast-height, tree height, percent canopy cover, and along a 20-m transect at 5-m intervals we classified understory and used a Robel pole to measure 100% visual obstruction height and maximum vegetation height. We will use these data to assess summer roost site selection so managers can better understand habitat needs of the Rio Grande wild turkey in the Edwards Plateau Ecoregion.

60. Enhancing Students' Understanding of Ecology, Conservation Identity. And Conservation Awareness With Outdoor Education Programming

Cheyenne Mack, Tarleton State University
Heather Mathewson, Tarleton State University

Abstract: Current research indicates that school-aged individuals lack conservation awareness and knowledge of conservation topics, which highlights a need for targeted education programs and engagement opportunities. Aligning program curricula with Texas Essential Knowledge and Skills (TEKS)- the state standards that define what students in Texas public schools are required to know and do at each grade level and in each subject-increases the likelihood that educators will implement them into their classroom plans. Outdoor education programs exposing students to natural resource topics and conservation ideas provide a unique opportunity to increase student content knowledge related to TEKS and cultivate positive changes in conservation attitude (how students feel about conservation) and identity (how students see themselves in conservation). There is a need to evaluate how these programs impact student participants. We will develop an outdoor education opportunity for high school aged students using purple martin (*Progne subis*) colonies. Our curriculum will use purple martin ecology, behavior, and breeding demographics to influence TEKS-aligned content knowledge, conservation attitudes, and conservation identity. To evaluate outcomes, we will use a pre- and post-assessment design that includes TEKS-aligned content questions, Likert-scale items, and open-ended reflections. Quantitative analyses will evaluate changes in content knowledge, and qualitative analyses will identify changes in student conservation attitude and identity. This project is expected to demonstrate that place-based and experiential education programs will increase subject content knowledge, support conservation identity development, influence conservation attitudes, valuates place-based and experiential education programs in conservation and wildlife management, and develop a replicable framework for similar programs.

61. Low-Effort, High-Resolution: Remote Cameras As An Emerging Tool For Monitoring Small Mammal Communities

Hayden Huff, 5923 Eldora drive

Andrea Montalvo, East Foundation

Ty Werdel, Texas A&M University - College Station

Abstract: Monitoring the effects of land management, climate change, and natural ecological processes on small mammal populations is essential for assessing ecosystem condition. Traditional monitoring relies on Sherman live traps, a labor-intensive method that requires substantial personnel time and can cause stress, injury, or mortality to captured animals. Although technological advances have introduced noninvasive alternatives, few studies have applied cellular camera systems capable of transmitting high-resolution images for real-time monitoring. We developed a reduced-effort method that integrates baited bucket attractants, automated oat micro-feeders, and BuckEye cellular cameras to generate full-resolution photographs for reliable species identification. These autonomous systems can operate for months to a year, greatly reducing labor requirements while increasing temporal coverage. Because small mammals freely enter and exit buckets, this approach avoids welfare concerns and seasonal constraints associated with live trapping. Preliminary comparisons with long-term Sherman trapping data from South Texas highlight the potential efficiency of this method. Historical sensitivity analyses indicate that achieving 90% of estimated species richness ($Chao1 \approx 16.5$; 90% target = 14.85 species) requires an average of 321 trap-nights under full sampling, increasing to 578–668 trap-nights when 70–90% of traps are unavailable. In contrast, our continuously sampling camera-bucket system can generate hundreds of detection opportunities per night, suggesting that comparable richness estimates may be obtained with substantially fewer effective trap-nights. By leveraging real-time, high-resolution cellular imagery, this approach offers a labor-efficient, noninvasive alternative to traditional trapping and has strong potential to reduce sampling effort while improving small mammal species richness monitoring across large landscapes.

62. Using Drones To Assess Spatial Arrangement Of Vegetation In Rotational And Continuous Grazing Regimes

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Antonio Cantu, Borderlands Research Institute - Sul Ross State University

Abstract: Livestock grazing is a tool in habitat management used as a disturbance to modify and provide habitat resources for wildlife. Constraints on efficient and accurate sampling methods have limited our understanding of how and why vegetation communities respond spatially to grazing regimes that differ in the frequency and intensity of disturbance. We used aerial imaging via drones, which have proven helpful to increase efficiency of sampling, to compare the fine scale vertical and horizontal arrangement of vegetation communities in two pastures under continuous and rotational grazing regimes. We hypothesize that heterogeneity in pastures under continuous grazing will be greater than in rotational pastures or pastures that have been excluded from grazing. We predict that increased uniform pressure from rotational grazing may decrease heterogeneity in vegetation spatial arrangement and increase homogeneity in vegetation height. The results from this study will enhance our understanding of the relationships of vegetation response to disturbance and grazing pressure. This will help land stewards make economically and environmentally responsible decisions when adjusting grazing practices or transitioning between grazing regimes, in support of their land stewardship efforts to serve both domestic livestock and native wildlife.

63. Avian Diversity Of A Texas Solar Site During Spring Migration

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Maria Ramirez, Texas State University
Madison Nadler, Texas State University
Leroy Walston, Argonne National Laboratory
Timothy Bonner, Texas State University
Clay Green, Texas State University
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Abstract: With the rapid development of photovoltaic (PV) solar power facilities throughout Texas and many North American birds facing population declines, especially due to habitat loss, there is an inherent need to determine how avian diversity of solar facilities compare to natural areas as birds migrate through Texas. To collect data, we deployed 8 autonomous recording units (ARUs) between a solar site and a reference site (4 ARUs each) in Central Texas. We programmed ARUs to record bird calls daily for 1 hour before and after sunrise, sunset, and midnight (6 hours total). We collected data for 12 weeks during spring migration, March 3rd – June 5th, 2025. Chao2 species richness for each week will be estimated from presence/absence data to account for undetected species, and functional diversity metrics (functional richness, evenness, and divergence) will be estimated for each week using presences/absence data and functional traits of each species detected. I will compare these diversity metrics between sites, and I will present preliminary results. Because anthropogenic change and solar development have been linked to reduced species richness in birds, and because low functional diversity has been linked to low species richness, I predict that there will be lower avian species richness and functional diversity at the solar site compared to the reference site. Determining avian functional diversity can assist solar site managers in making informed decisions on how to manage/improve site quality for wildlife for current and future PV solar facilities.

64. Spatial Responses of Herpetofauna to Burn Piles Under Cattle and Multispecies Grazing Regimes

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Abstract: Brush management via mechanical clearing and burn piling is a ubiquitous practice for maintaining Texas rangelands, yet the micro-scale impacts of these structures on local herpetofaunal communities remain poorly understood. We investigated the influence of burn piles on reptile and amphibian distribution at the Texas A&M AgriLife Research Station at Sonora, specifically evaluating how distance from the pile, time since creation, and grazing treatment affect species presence. We conducted comprehensive herpetological surveys surrounding burn piles across two management regimes common to the Edwards Plateau: cattle-only grazing and multispecies (cattle and goat) grazing. We recorded species richness and abundance at varying distances from the pile edge to determine spatial association. Preliminary observations suggest burn piles function as artificial refugia, with higher encounter rates in the immediate vicinity of piles compared to open range. We are currently finalizing analyses to determine if the inclusion of goats—browsers that interact directly with woody piles—alters herpetofaunal reliance on these features compared to cattle-only operations. This presentation will detail the correlation between pile proximity and observation frequency, providing determining P-values for distance, pile age, and grazing treatment. Understanding these dynamics is critical for landowners; determining if piles act as refugia under different grazing pressures allows for better integration of brush management and livestock strategies to support herpetofaunal biodiversity.

65. Resource Selection of Non-Breeding Cackling Geese (*Branta Hutchinsii*) In the Southern Great Plains

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Alynn Martin, Caesar Kleberg Wildlife Research Institute

Kevin Kraai, Texas Parks & Wildlife Department

Bart Ballard, Texas A&M University - Kingsville

Abstract: The selection of roosting and foraging sites is of great ecological importance to waterfowl. Roost sites provide safety from predators and are expected to be within energetically appropriate distance from foraging sites, and forage requirements can change over the course of the non-breeding period. The Cackling Goose (*Branta hutchinsii*) is gregarious during the non-breeding period, roosting in large flocks on open water bodies and traveling to surrounding land during the day to feed. The primary objective of this study is to determine landscape composition surrounding roost sites. We deployed 309 GPS-GSM collars on female Cackling Geese in the southern Great Plains region (Colorado, Kansas, New Mexico, Oklahoma, and Texas), USA. We will calculate the 50th, 95th, and 99th percentile of foraging flight distances to be used as radii around roost sites for varying spatial scales of availability. We will reclassify CropScape imagery into 6 landcover classes. Resource selection and integrated step selection functions will be used to understand the preference of reclassified landcover classes relative to a unique class, such as grass or water. By understanding the environmental factors which drive resource selection, this research will help identify priority areas for nonbreeding habitat management of cackling geese wintering in the southern Great Plains.

66. Parasitism In Quail: Drivers of Spatial Patterns in Texas

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Abstract: Quails in North America have been experiencing range-wide population declines. Although quail populations inhabiting semiarid environments are strongly influenced by precipitation, northern bobwhite (*Colinus virginianus*) populations have remained low despite above-average rainfall and ample habitat in some regions of Texas. Parasites (eyeworms [*Oxyspirura petrowi*] and cecal worms [*Aulonocephalus pennula*]) have been identified as potential causes for these declines. An interesting spatial-gradient pattern occurs in the prevalence of these parasites: eyeworms exhibit decreasing prevalence from northern Texas (50-90%) to southern Texas (4-10%) whereas cecal worms do not (80-90% prevalence across the N-S gradient). We hypothesized that species abundance of intermediate hosts—species required for the helminth development—varies from north to south. Our objective was to identify drivers of spatial patterns of helminth prevalence in northern bobwhite, specifically intermediate-host diversity (i.e., grasshoppers, crickets, wood cockroaches, and other insects). We collected insects during June–July 2025 across the entire N–S gradient of Texas (n = 8 counties) using sweep nets and pitfall traps (n = 20 sampling points per county). Grasshopper diversity decreased from northern Texas (53 species; Hemphill County) to southern Texas (20 species; Hidalgo County), as did grasshopper abundance (950 grasshoppers vs. 200 grasshoppers, respectively). We will use molecular techniques to screen insects for the presence of eyeworms and cecal worms and calculate prevalence for each helminth by insect species. These findings will shed light on the drivers of the spatial patterns of quail parasitism and help guide quail conservation efforts.

67. Can Unmanned Aerial Vehicles Be Used to Estimate Stocking Rate in South Texas?

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Abstract: Stocking rate is a critical factor influencing vegetation composition and biomass. Traditionally, stocking rates have been calculated based on estimates of available biomass estimated using vegetation clipping techniques. Although this method is reliable, it is labor and time intensive, as well as impractical for surveying large properties (e.g., >10,000 ha). Given recent technological advancements, unmanned aerial vehicles (UAV) may provide potential for efficient, large-scale estimation of herbaceous biomass. Our objective is to compare biomass estimates collected from UAV imagery and traditional vegetation clipping on a working landscape in southern Texas (Jim Hogg County). We surveyed ten 4-hectare plots using an UAV (DJI Phantom 4 Pro V2) at a 50-m flight altitude during November 2025. We also clipped vegetation within a sampling frame (0.25 m x 0.25 m) every 10 m along a 50-m transect placed in the center of each 4-ha plot. Clipped vegetation was oven-dried at 60°C to a constant mass, weighed, and converted to g/m². We will conduct correlation between vegetation-clipping and UAV-derived biomass estimates to determine the reliability of UAVs in biomass estimation. In addition, we will calculate stocking rates using estimates from each method and compare. Our study will provide critical insight regarding whether UAVs can be an efficient and cost-effective tool to reliably estimate vegetation biomass and stocking rates to properly manage rangelands in South Texas.

68. Shifts In Historical and Contemporary Fish Assemblages and Environmental Variables in South Texas Streams

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Abstract: Historical records offer valuable insight into the shifting composition of aquatic communities. This study compares historical and contemporary fish assemblages from 20 wadeable streams near Kingsville, Texas, to assess community turnover and potential environmental drivers. Historical species occurrence data were obtained from the Fishes of Texas database (FoTX), providing a regional baseline for pre-2000 conditions. Contemporary data are being collected through five standardized seine hauls per site, following protocols adapted from Standard Methods for Sampling North American Freshwater Fishes (Bonar et al. 2009) for warmwater wadeable streams. Block nets will be deployed when feasible to isolate reaches and improve capture efficiency. Captured fish will be temporarily stored in containers to prevent recapture, identified to species, enumerated, and then released. Environmental data (e.g., temperature, dissolved oxygen, conductivity, substrate, and habitat complexity) are collected concurrently at each site. Assemblage changes will be assessed using presence–absence comparisons and similarity indices. While historical sampling lacked environmental measurements, patterns in contemporary site conditions may suggest variables influencing assemblage shifts. Results from this study will provide insights into how South Texas stream fish communities respond to watershed- and land-use change, informing future conservation and management strategies.



TEXAS CHAPTER

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