Michael D. Whitson

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EDUCATION

Doctor of Philosophy — **Wildlife, Aquatic, and Wildlands Science and Management**

Texas Tech University
Department of Natural Resources Management Lubbock, Texas

Dissertation: Effects Of Using Controlled Grazing and Prescribed-Burning Treatments as Disturbance Events in Lesser Prairie-Chicken Habitat Management in Eastern New Mexico.

Specifically: Estimate Lesser Prairie-Chicken Habitat Selection and Nesting Success, Quantify and Compare Fine-Scale and Patch-Scale Vegetation Composition and Structure, Available Invertebrate Forages Among Multiple Pre-treatment and Post-treatment Temporal Periods, And Model Standing Herbaceous Biomass

Master of Science — **Wildlife, Aquatic, and Wildlands Science and Management**

Texas Tech University
Department of Natural Resources Management Lubbock, Texas

Thesis: Use of Moist-Soil Management Techniques for Wintering Waterfowl in Fallow Rice Fields on the Upper Texas Coast

Specifically: Estimate seedbank potential, soil nutrients cycling, and quantify and compare differences in vegetation composition, structure, and seed production, invertebrate production, summer and winter bird use, and model available forage and metabolizable energy in multiple fields subjected to one-of-three different temporal flooding periods and one-of-two different drawdown lengths

Bachelor of Science — **Range and Wildlife Management**

Texas Tech University
Department of Natural Resources Management Lubbock, Texas

EMPLOYMENT HISTORY

PhD Graduate Research Assistant

Texas Tech University
Department of Natural Resources Management
Lubbock, Texas

Primary Research Responsibilities

Develop protocols and methods to collect data over four field seasons to successfully quantify lesser prairie-chicken habitat selection and nesting success, multiscale vegetation community composition, and invertebrate assemblage response to prescribed-fire and grazing disturbance events at various pre-treatment and post-treatment temporal periods

Hire, advise, and mentor master's level graduate student and develop protocols and methods to for the investigation of beef-herd health, cattle movements, and livestock habitat used during grazing treatments

-Conducted interviews, screenings, and hiring of 27 technicians (14 full-time seasonal field technicians, 13 part- time student lab and field technicians)

-Coordinated and oversaw participation of 51 volunteers during field efforts and capture events

-Worked in conjunction and coordinated with Federal, state, and county agencies to ensure field activities and logistical requirements met at multiple locations, involving multiple project phases concurrently and separately

-Prepared periodic and annual progress reports, for federal, state agency, and NGO partners, to effectively communicate progress, define goals, and identify requirements for completion, and research results

-Performed interview approved by collaborators and supervisors with local, state, and national press and journalist discussing research goals, study animal status, as well as current and possible future management implications

-Provided supervisory and logistical support to multiple technicians working on various project phases concurrently during multiple seasons and at multiple locations

-Performed day-to-day task assignment, employee oversite, safety training, travel and logistics to ensure employee and animal safety and successful completion of research objectives

-Ensured all day-to-day and seasonal infrastructure and logistics are in place to successfully complete all aspects of research, including annual field-housing, materials, equipment, vehicle, trapping, and biological sampling materials

-Established annual budget for seasonal field-housing, materials, equipment, labor, transportation, laboratory expenditures, and logistics while overseeing and ensuring all total expenses would not exceed the overall project budget (~ $850,000)

-Managed and maintained all paperwork related to day-to-day travel, departmental vehicle use, project purchases, overnight travel and lodging, field housing, utilities and other expenses

-Managed expenditures to ensure successful completion of all primary and secondary research objectives, data collection, and result delivery

-Maintained field equipment, including departmental vehicles and project UTVs and ATVs, to ensure long-term safe completion of project goals

-Developed and managed multiple large databases (~ 250,000 lines of data with > 3,000,000 data points) containing data relating to animal morphometrics, capture, animal GPS movement and mortality, nest site selection, vegetation community composition, invertebrate assemblage and biomass, and standing herbaceous biomass using various Microsoft based programs

-Ensured and completed vegetation and invertebrate data entry, data management and evaluation, statistical analysis, modeling, developed result inference using Microsoft based programs and Program R

-Modeled animal movement, survival, home range, habitat selection, nest site selection, and nest success using various Microsoft based programs, Program R, and ArcGIS Pro

-Established and implemented protocols and methodologies to estimate patch-scale and fine-scale plant community composition response to grazing events, fire treatments, and at various temporal periods following disturbance treatments

-Developed protocols and sampling methodologies to quantify and model standing herbaceous vegetative biomass at various pre-treatment and post-treatment temporal windows

-Formulated and implemented survey protocols and methods to estimate terrestrial macroinvertebrate assemblage and biomass

-Established and implement methods to successfully quantify lesser prairie-chicken habitat selection

-Established methods and protocols to quantify plant community composition, quantify associated vegetative canopy cover, visual obstruction, and litter depth, at nest site locations and paired random points to estimate nest site selection and quantify prescribe-fire and grazing treatment effects on nest success

-Developed, implemented, and oversaw capture, handling, banding, morphometrics and tissue collection protocols following safe animal use and care guidelines

-Constructed and deployed walk-in funnel traps and electromagnetic drop-nets for capturing lesser prairie-chicken on spring lekking grounds

-Trained field technicians to capture and handle study animals, collect, process, and store biological tissue samples (including brachial and jugular blood sampling) safely and efficiently following established and approved guidelines

-Oversaw proper temporary and long-term storage of biological tissue samples for parasitology, genetic, heavy metal, and toxicological analysis

-Responsible for authorship of professional publications and articles, and presenting research results at multiple national and state scientific conferences and symposia

-Responsible for authorship and publication of dissertation entitled “Nest Site and Habitat Selection of Lesser Prairie-Chickens in Response to Various Fire and Grazing Regimes in Eastern New Mexico” (in progress)

Secondary Research & Collaboration

Lesser prairie-chicken parasite exposure:

-Assisted with biological tissue collection, presentation and publication of post-doctoral research results quantifying parasite load, species assemblage, and disease exposure rates in lesser prairie-chickens

Beef herd health and cattle movement and habitat use:

-Provided guidance, supervise, and advise graduate student with all aspects of Master level research quantifying beef herd health, cattle movement, and habitat selection of cattle used for grazing events in habitat management for lesser prairie-chickens

-Developed theoretical design and determine sampling methodologies to quantify pre-and post-treatment herbaceous biomass, forage nutrition content, fecal nutrient deposition, water

source and terrain effects on cattle movement, and grazing event influence on lesser prairie-chicken habitat and nest site selection and ensured successful completion of project goals including publication of thesis "An Assessment of Prescribed Grazing for Lesser Prairie-Chicken Habitat on Beef Herd Health and Productivity", and dissemination of research results

-Advise academic advancement of Master level graduate student, provide guidance on research deliverables including research results presentations (oral and poster) at state and national meetings, edit, ensure quality, and completion of annual reports to collaborators, and provide support and edits to complete publication results

Genetics connectivity, genome mapping neonicotinoid exposure, and heavy metal exposure:

-Assist with tissue collection and collaborate with efforts successfully mapping the genome assembly of the lesser prairie-chicken

Anthropogenic audio influences:

-Developed methods and conducted research to estimate anthropogenic audio influences on spring lek site selection of male and nest site selection of female lesser prairie-chickens

Developed original future research projects and collected samples and stored for analysis to:

- Quantifying and estimate lesser prairie-chicken exposure to neonicotinoid to develop baseline exposure rates in avian species
- Estimate heavy metals exposure rates of lesser prairie-chickens in the SSOP ecoregion
- Quantify genetic movement between lesser prairie-chicken populations

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MS Graduate Research Assistant

Texas Tech University
Department of Natural Resources Management
Lubbock, Texas

Primary Research Responsibilities

Successfully used field, greenhouse, and laboratory data to quantify different temporal flooding initiation seasons and drawdown lengths used during moist-soil management effects on soil nutrient content, vegetation seedbank potential, vegetation community response, vegetation community structure, invertebrate assemblage and biomass, and modeled seed production used as forages by waterfowl, quantify available metabolizable energy (DEDs) using seed production models and invertebrate biomass estimates. Estimated avian use of treatment areas during spring and summer flooding events, and quantify winter waterfowl use of moist-soil managed rice fields on the upper Texas coast using ocular and photo trap survey data

-Managed expenditures to ensure successful completion of all research objectives, data collection, and research result delivery within budgetary constraints

-Interviewed, hired, and provided supervisory support, and managed multiple (5) laboratory technicians working on various project phases concurrently

-Planed and managed all phases of employee training, safety, and laboratory sample processing

-Developed and managed databases with large data sets containing soil nutrient content greenhouse produced vegetation for seedbank estimation, field vegetation species composition data, vegetation biomass and visual obstruction data, seed biomass and production data, invertebrate assemblage and biomass data, spring and summer ocular and photo-trap avian survey data, winter waterfowl survey data

-Processed and ground soil samples for lab analysis to determine nutrient content

-Processed vegetation community samples identifying plants to species, ensured data entry and managed large databases seed production

-Processed invertebrate samples counting and identifying individuals to family, drying and weighing samples to estimate biomass and assemblage response to different moist-soil management flooding initiation periods, depths, and durations

- Processed seed samples and generated seed production models using seed head morphometrics and species composition estimates of desirable species produced under various moist-soil managed conditions

-Ensured and completed all data entry, data management and evaluation, statistical analysis, modeling and inference using program R, SAS, ArcGIS, Google Earth and Microsoft based programs

-Using plant composition, seed production models, and invertebrate biomass estimates quantified available metabolizable energy for waterfowl produced under various moist-soil management flooding initiation periods, depths, and durations

-Modeled winter waterfowl carrying capacity estimates (DEDs) using seed production and invertebrate production estimates using linear regression and forward stepwise models in Program R and Microsoft based programs

-Quantified waterfowl and avian species use of managed areas during spring and summer flooding events using data from camera traps and ocular surveys using Program R and Microsoft based programs

-Quantified winter waterfowl use of fall flooded moist-soil units subjected to various spring moist-soil flooding regimes using camera traps and ocular surveys using Program R and Microsoft based programs

-Ensured all infrastructure and logistics in place to successfully complete all aspects of research

-Effectively communicated, coordinated efforts, and reported progress, and worked with multiple federal (USFWS and USDA), state (Ag Extension Service) agencies to ensure successful data acquisition and analysis

-Prepared periodic and annual progress reports using various Microsoft based programs to communicate progress, define goals, identify future requirements, and effectively display results to multiple federal and state agency partners

-Worked in extreme conditions for extended periods

-Responsible for authorship and publication of thesis, professional publications, and oral and poster presentations of research results at international, national, and state scientific symposia and conferences

-Successfully completed in-depth statistical analysis and modeling and published thesis entitled “Use of Moist-Soil Management Techniques for Wintering Waterfowl in Fallow Rice Fields on the Upper Texas Coast”

-Participated in travel and overnight stays to present research results at collaborator and stakeholder meetings, state, national and international conferences and symposiums

-Responsible for authorship of professional publications and successfully presented research results and findings at multiple international, national, and state symposia and scientific conferences (including presentation with an audience >500 people)

Secondary Research & Collaboration

Quantify waterfowl hunter species identification

-Analyzed, and interpreted data gathered to quantify waterfowl identification success by hunters using National Wildlife Refuges on the upper Texas coast and presented results at national and international symposia and conferences

Lesser prairie-chicken research

-Volunteered and assisted fellow graduate students with capture, banding, record morphometrics, biological tissue sample collection of lesser prairie-chickens in Kansas

Mule deer VHF telemetry

-Volunteered and assisted with radio telemetry tracking of Mule deer for habitat use, home range, and survival research in the west Texas panhandle

Pronghorn antelope translocation

-Volunteered and assisted New Mexico Game and Fish with Pronghorn antelope capture, animal handling, and morphological data collection, for animal translocation research

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MS Graduate Research Assistant

Stephen F. Austin State University
Arthur Temple College of Forestry and Agriculture
Nacogdoches, Texas

Transferred with Advisor when they accepted endowed chair position at TTU in 2014)

Primary Research Responsibilities

Developed and implemented research methodologies and protocols for original field, greenhouse, and laboratory research to estimate effects of various inundation temporal periods and drawdown lengths under a "moist-soil management" framework.

Developed and successfully implemented survey methods and protocols to collect soil samples, conduct various surveys to gather data to estimate and quantify soil nutrient content and cycling, seedbank potential using the emergence method, vegetation community composition, vegetative structure, seed production, invertebrate assemblage and biomass, develop available metabolizable energy (DEDs) models using seed production models and invertebrate biomass, estimate waterfowl and shorebird use during summer treatment events and winter using camera traps and ocular surveys, and quantify differences in herbaceous biomass production in tilled vs non-tilled fields, to better understand and more efficiently manage fallow rice fields on the upper Texas coast

-Determined and implemented various modified moist-soil management schemes and regimes to estimate effects of variations in temporal flooding season, flooding depth, and drawdown duration on plant community composition, seed production, waterfowl carrying capacity, invertebrate abundance, soil macronutrient cycling, summer shorebird use, and winter waterfowl use in fallow rice fields of the upper Texas coast

-Estimated and quantified vegetation community, seed production, and invertebrate assemblage response to different moist-soil management flooding initiation periods, depths, and durations using Program R

-Developed and implemented camera and ocular waterfowl and avian species use methodologies

-Established sample protocols and collected soils samples for lab analysis to determine effects of implemented experimental treatments on soil macronutrient levels

-Developed and managed multiple databases with large data sets containing soil nutrient content greenhouse produced vegetation for seedbank estimation, field vegetation species composition data, vegetation biomass and visual obstruction data, seed biomass and

production data, invertebrate assemblage and biomass data, spring and summer ocular and photo-trap avian survey data, winter waterfowl survey data and analysis using various Microsoft programs, Program R, and ArcGIS

-Managed expenditures to ensure successful completion of all research objectives, data collection, and research result delivery within budgetary constraints

-Interviewed, hired, provided supervisory support, and managed 4 full-time and 4 part-time field and laboratory technicians and volunteers working on various project phases at multiple locations concurrently

-Planed and managed all phases of employee training, safety, travel, field data collection, and laboratory sample processing

-Managed travel and long-term stay of technicians, personnel, and equipment by coordinating and communicating effectively with state and federal agencies

-Constructed methodology and quantified seed bank potential of converted wetlands and fallow rice fields following laser leveling practices on the upper Texas coast

-Ensured all infrastructure and logistics in place to successfully complete all aspects of research

-Effectively coordinated work in conjunction with federal (USFWS and USDA), state (TPWD), and county agencies (Chambers County Water District) to ensure field activities and logistical requirements met at multiple locations, involving multiple project phases concurrently and separately

-Successfully completed federal certification courses and safely operated airboats (> 40 hours), outboard equipped watercraft, ATV'S, and UTV'S, to perform surveys, collect soils, invertebrates, vegetation samples, assist in animal captures, collect morphometrics and biological tissue samples

-Ensured all personnel obtained required federal certifications and safely operated ATV'S and UTV's

-Prepared periodic and annual progress reports and communicate progress, define goals, and identify future requirements effectively with multiple federal and state agency partners

-Worked in extreme conditions for extended periods

-Responsible for authorship of professional publications and presentations of research results and findings at multiple international, national, and state symposia and scientific conferences

-Safley and successfully piloted airboats, and motorized outboard watercraft, UTVs, ATVs anx4 vehicles to reach sample locations

-Worked in extreme weather conditions for extended periods

-Participated in travel and overnight stays to present research status and results at collaborator and stakeholder meetings, state, national and international conferences and symposiums

Secondary Research & Collaboration

Quantify waterfowl hunter species identification

-Developed methodologies, managed databases, and acquired data from ~400 surveys to quantify waterfowl identification success by hunters on Texas coastal national wildlife refuges. Successfully presented preliminary results at multiple, state national and international scientific waterfowl and wildlife conferences

Assisted with black-necked stilt heavy metal exposure and nest success research

-Piloted airboats and UTV's while assisting with capture, banding, deploying VHF transmitters, biological tissue collection (blood and feathers), collection of morphometrics, radio telemetry tracking, to assess heavy metal exposure, nest sight selection, and success on the upper Texas coast.

Mottled duck exposure to heavy metals.

-Piloted airboats and assisted fellow graduate students by collecting biological tissues (blood, bone, and soft tissues), vegetation, invertebrates, and soils while ensuring proper storage and transport to quantify blood lead contamination in mottled ducks and investigating possible contamination pathways

-Assisted with USFWS with federal mottled duck and whistling duck capture and banding program.

Snowy Plover Nest Success and Heavy Metal Exposure

-Assisted with capture, biological tissue collection, soil and water collection while ensuring proper storage and transport for future analysis

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Field Technician

Kansas State University
Fish and Wildlife Cooperative Research Unit
Manhattan, Kansas

Primary Responsibilities

-Design method and protocols for assessment of seedbank potential fallow rice fields on Anahuac National Wildlife Refuge Areas to determine potential use as moist-soil management areas

-Pilot airboats and drive UTVs, ATVs, and vehicles in adverse conditions to successfully collect soil and seed bank samples

-Worked in remote areas and under extreme environmental conditions for extended periods

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Biological Science Technician

United States Fish and Wildlife Service
McFaddin National Wildlife Refuge
Sabine Pass, Texas

Primary Responsibilities

-Oversaw hunter check-station during waterfowl season and collect biological data and tissue samples for later analysis

-Worked with public checking-in hunters entering the Refuge, assigning and documenting hunting party locations, processing hunter checking out post hunting efforts

-Collected biological data from harvested waterfowl including age, sex, weight, wing-cord length, and species

-Collected biological tissue samples and organs from harvested mottled ducks following for later analysis

-Collected fees, document payments, and maintains records of hunter activities

-Provided maps and explained general regulations and restrictions to the public

-Identified species, age, and sex of all waterfowl harvested by hunters and document and report any failures of regulation compliance to law enforcement personnel

-Maintained harvested bird species and morphometrics data records, performed data entry, data management, and data analysis using ArcGIS and various Microsoft computer programs and produced charts, graphs, and reports as assigned

-Assisted with refuge/complex wide waterfowl banding and monitoring program collected morphometric and biological data, program focus was mottled ducks and whistling ducks, but opportunistically captured, measured, and banded other species and bird types

- Personally banded > 500 waterfowl and > 10 individuals of other species

-Assisted with coastal Wilson's, snowy, and semipalmated plover surveys

-Assisted in gastrointestinal tract analysis to determine lead ingestion rates in hunter harvested mottled ducks

-Collected biological tissue samples (blood, soft tissues, and bones) to assessing harvested mottled duck lead exposure rates

-Collected waterfowl wings and assisted with complex wide species, sex, and age class identifications events (following Carney 1992)

-Performed assigned tasks such as

- Repair of and maintenance of water control structures, levees, and infrastructure
- General maintenance (mowing, trash collection etc.)
- Installed erosion control devices to slow wildlife caused erosion on internal levee systems
- Installed sand fence to reestablish coastal sand dunes as part of hurricane beach remediation

-Assisted with project using GPS transmitters to determine habitat selection and nest success of mottled ducks

-Generated and utilized maps in ARC/GIS to document movements of mottled ducks fitted with satellite transmitters and classify surrounding land use characteristics

-Assisted with "Marsh Madness" public interpretive outreach program

-Assisted with USFWS with federal mottled duck and whistling duck capture and banding program. Personally aged, sexed, and banded > 200 waterfowl

-Gained certification and operate a variety of equipment such as specialized marsh vehicles, airboats, outboard motorboats, four-wheel drive vehicles, all-terrain vehicles, agriculture tractors and other equipment

-Operated various specialized marsh equipment including airboats (> 40 hrs.), outboard

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Nonresponse Follow-Up Enumerator

United Staes Census Bureau
Temporary Field Office
Mesquite, Texas

-Conducted follow up door to door census surveys at locations that were classified as unresponsive on previous Census Bureau visits

-Worked with little supervision and often in extreme environmental conditions and

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Lead Biological Technician/ Fire Effects Monitor

National Park Service
Big Thicket National Preserve,
Woodville, Texas

Primary Responsibilities

-Oversaw daily field activities and ensured crew safety

-Lead field crew in daily collection efforts and ensure sample and data integrity

-Monitored vegetation response to prescribed fire regime in Texas long-leaf pine forests of southeast Texas (perform point-count, canopy cover, quadrat, seedling, timber surveys)

-Conducted species richness and diversity assessments in established vegetation plots by identifying all woody plants to species and categorize by size classifications

-Conducted live fuel moisture sampling and analysis to estimate fire severity

-Performed over-story plant surveys, identify plants to species, determine species viability, community composition, estimate canopy cover, and determine fire volatility

-Assisted with assessments of reintroduction attempts of endangered Texas Trailing Phlox species and determine phlox and associated species response to prescribed fire regimes

-Successfully completed I-100, I-130 & I-190 wildland fire fighter training

-Performed general maintenance and upkeep duties on vehicles, park, and office areas

-Assisted with public outreach programs

Lead Research/Field Technician

Texas Tech University
Lubbock, Texas

Primary Responsibilities

-Assisted with ecosystem functionality research conducted by several master and PhD level graduate students at multiple universities quantifying overall functionality of Playa systems

-Made initial contact and obtain permission from ~ 178 landowners to conduct various concurrent research in playa systems

- Ecosystem functionality
- Sedimentation rates
- Buffer zone effects
- Vegetation community composition
- Amphibian community assemblage

-Coordinated field efforts with multi-university based graduate students, field crews and private landowners

-Assisted in determining appropriate field techniques, protocols and sample methods to successfully sample water, soil, and biological tissues for multiple concurrent projects

-Prepared and organized large databases of landowners and playa locations used to direct access and sampling efforts of multiple graduate student lead research teams from multiple universities

-Oversaw sample collection and processing of vegetation, soil, sediment, amphibian tissue, and water samples

-Assisted with vegetative community composition surveys in >144 playas lakes identifying individual plants to species to quantify percent plant community composition

-Installed water catch devices, obtained water samples, transported and conducted lab analysis following EPA protocols to estimate sedimentation rates

-Collected soil and water sample in accordance with EPA protocols for heavy metals testing

-Conducted invertebrate communities sampling to quantify community structure and species presence/absence

-Performed point frame and step-count vegetation surveys

-Measured soil sediment rates on playa floor and evaluate playa elevation variances to estimate variations in sedimentation rates in wetlands associated with various surrounding land cover types

-Set up and prepared large databases for plant, water, amphibian, sediment and invertebrate field results

-Participated in extensive travel and multiple overnight stays to perform surveys (50 to 70%)

-Operated state-owned 4X4 vehicles. Responsible for equipment preparations, operation, and maintenance

-Worked in extreme conditions for extended periods in High plains area of Texas and eastern New Mexico

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Department Manager (Lumber, Building Materials & Commercial Sales)

Lowe's Home Improvement
Lubbock, Texas Supervisor:

Primary Responsibilities

-Directly supervised and maintained a workforce of between ~20 and ~50 employees

-Assisted in all phases of the hiring process including interviews and selection

-Successfully lead, encouraged, and directed a diverse work force while promoting an inclusive and diverse work environment

-Promoted and created a positive and proactive work environment

-Responsible for all product ordering to maintain > $3,000,000 product inventory

- Proactively order products and materials to meet future seasonal demands
- Anticipate market to successfully increase sales and exceed sales goals
- Successfully anticipate occasional commodity product shortages and manipulate inventory to counter shortages and increase marketing opportunities

-Successfully met budgets and exceeded sales goals

- Set multiple regional week, month, and annual departmental sales records

-Planed and successfully implemented merchandizing schemes, product placement, product promotions to enhance seasonal sales

-Oversaw all aspects of commercial sales including blueprint and architectural plan interpretation and special product ordering (doors, windows, Trusses, etc.)

-Developed weekly employee schedule and duty assignments to maximize employee coverage and productivity

-Responsible for maintaining a safe work environment

-Assisted with all aspects of customer service

-Resolved any product supplier issues

-Successfully addressed customer complaints and issues

-Professionally addressed any employee issues or complaints

-Successfully and timely completed and performed employee annual performance reviews

-Completed and administered disciplinary reviews and actions

-Ensured safe operation of forklifts, reach trucks, and order pickers

-Presented sales by product group, department profit and loss statements, sales action plans and inventory status reports during weekly manager meetings

-Developed and implemented action plans to increase commercial sales and contractor contact

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Biological Intern

Texas Parks & Wildlife
White Oak Creek WMA

Omaha, Texas

Primary Responsibilities

-Performed wood duck nest box survey to determine nest box use, nest success, predation and dump nest rates in previously placed nest boxes

-Conducted white-tailed deer population survey utilizing motion activated cameras

-Installed fire lines utilizing tractor with bat-wing shredder and one-way plow in prescribed areas

-Assisted with prescribed/controlled burn on Cooper Lake WMA

-Assisted with performing regional spotlight surveys

-Performed routine maintenance including construction and repair of gates and fences, WMA boundary/perimeter maintenance, creation of firebreaks, shred and mow vegetation, and maintain roadways access using agriculture tractors and implements (such bat-wing brush hogs, sickle-mowers, disks, and plows)

-Operated outboard motorized watercraft including boats equipped with "go-devil" long tiller shallow draft engines

-Successfully and safely conducted work duties and surveys using ATVs and 4x4 vehicles to access remote areas

-Towed ATV's and watercraft to work locations using state vehicles

-Worked in extreme environmental conditions for extended periods in Bottomland Hardwoods ecosystems in east Texas

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Research Field Technician

Texas Tech University
Department of Natural Resources Management
Lubbock, Texas

Primary Responsibilities

-Conducted regional shorebird nest success and shorebird species occurrence survey, throughout northwest Texas

-Conducted nest site searches on specific playa systems and salt lakes throughout the Texas Panhandle and identify nest to species, record nesting stage, and estimate hatch date

-Conducted follow-up surveys estimating nest success and plausible egg predation sources

-Assisted with nesting success and DNA parentage research on snowy plovers occurring in Salt lakes in the Southern Great Plains

-Assisted with Snowy plovers capturing, banding, blood and biological tissue sample, and morphometrics collection following established protocols

-Assisted with trapping methodology development and trap design

-Kept accurate and up to date field notes

-Participated in extensive travel and overnight stays (50-60%)

-Worked in extreme environmental conditions for extended periods in salt lakes of west Texas

Lead Field Technician

Texas Tech University
Department of Natural Resources Management
Lubbock, Texas

Primary Responsibilities

-Assisted with research investigating fire-ant depredation on Northern Bobwhite chicks and influences on nest success

-Conducted and record field work activities at all phases of research including capture, biological tissue collection, transmitter fitting, on hens

-Monitored movement of hens using ATS VHF radio telemetry equipment

-Located and identified nest sites, determined initiation dates, nesting stage, and expected hatch date

-Sampled nest sites for associated exotic fire-ant population occurrence and abundance

-Monitored nests, determined nest success or cause of failure

-Performed post-hatch flush counts to estimate recruitment

-Recaptured birds and recovered VHF collar transmitters

-Utilized photography equipment to document all aspects of research

-Constructed traps and located quality trap sites

-Kept accurate and up to date field notes and journals

-Operated and maintained ATV's and four-wheel drive vehicles.

-Worked in adverse conditions for extended periods throughout the summer on the Texas mid-coastal plains

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Lead Field Technician

Texas Tech University
Lubbock, Texas

Primary Responsibilities

-Oversaw in depth mid-winter survey efforts of wintering waterfowl in the Southern Great Plains and coastal plains of Texas

-Lead multiple survey crews, and organized, assigned crews to specific survey areas, and managed survey efforts

-Established contact and coordinated with private landowners and survey crews

-Identified wintering waterfowl, to species as well as identify specific individuals previously marked with leg or neck bands

-Kept accurate and up to date field records including flock size, species, collard individuals, and GPS locations of surveyed areas

-Reviewed all team survey results and ensured proper paperwork completion

-Participated in extensive travel and overnight stays and worked in adverse conditions for extended periods

Student Research Assistant

Texas Ag Extension Service
Lubbock, Texas

Primary Responsibilities

-Assisted with evaluating field nematode infestation rates in the High Plains region of Texas to quantify response to various field treatments

-Acquired and processed soil samples using multiple techniques

-Used image analysis system to determine and evaluate individual plant conditions and estimate percent root damage by nematodes

-Kept accurate and up to date field notes

-Assisted in performing various field seed treatment experiment trials

-Assisted with crop thinning and field weed reduction efforts in field experiment areas

-Worked in extreme conditions for extended periods

-Used centrifuge, autoclave, and vent hood to process samples and propagate cultures

-Worked in laboratory utilizing safe lab practices

Student Technician

Texas Tech University
Department of Natural Resources Management
Lubbock, Texas

Primary Responsibilities

-Responsible for conducting detailed mid-winter surveys on waterfowl in the Texas High Plains

-Established contact and coordinated with private landowners to perform surveys

-Identified flocks of geese to species, estimated flock size, and identify specific individuals that had previously been marked with leg or neck bands

-Worked independently, traveling extensively, and working in extreme conditions for extended periods

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Research Technician

Texas Tech University
Department of Natural Resources Management
Lubbock, Texas

Primary Responsibilities

-Assisted in conducting study determining plant species occurrence and composition in playa systems in New Mexico, Texas, Kansas, Colorado, and Oklahoma for field guide publication titled "Flora of the Playas"

-Actively worked with multiple federal, state, and local agencies to determine research site locations and coordinate filed work

-Made initial landowner contact and obtain permission to perform research activities

-Conducted step-count vegetation surveys in >300 playa systems in 5 states

-Successfully identified ~ 175 different plant species occurring within playa systems

-Conducted water surveys to quantify pH, dissolved oxygen, and salinity levels

-Assisted in taking publishable photographs of representative plant specimens

-Acquired representative museum species samples for verification and preservation

-Responsible for supervision of multi-person survey crew ensuring safe working conditions and sample integrity

-Participated in extensive travel and overnight stays to perform surveys in remote locations

-Kept accurate and up to date field records

-Worked in extreme conditions for extended periods

-Safely operated and maintained 4 x 4 vehicles

PUBLICATIONS

Whitson, M.D. and W.C. Conway. 2016. Moist-soil Management and Ducks on the Upper Texas Coast. "TTU Wildlife Research News" in Texas Wildlife: Publication of the Texas Wildlife Association 32(2): 28-31. (popular article)

Whitson, M.D., W.C. Conway, D.A. Haukos, D. P Collins. 2018. Use of Moist-Soil Management Techniques for Wintering Waterfowl in Fallow Rice Fields on the Upper Texas Coast. Thesis, Texas Tech University, Lubbock, Texas, USA

Black A., K. Bondo, A. Mularo, A. Hernandez, Y. Yu, C. Stein, A. Gregory, D. Haukos, **M. Whitson**, B. Grisham, Z. Lowe, J. Andrew DeWoody. 2023. A Highly-contiguous and Annotated Genome Assembly of the Endangered Lesser Prairie-Chicken (*Tympanuchus pallidicinctus*). Genome Biology and Evolution 15:1-6.

Evans, L. E., 2023. An Assessment of Prescribed Grazing for Lesser Prairie-Chicken Habitat on Beef Herd Health and Productivity. Thesis. Texas Tech University, Lubbock, Texas

In Progress, Submitted, or in Revision After First Submission:

Bondo K, B. Grisham, **M. Whitson**. A Novel Parasite in Lesser Prairie-chickens in Eastern New Mexico

Whitson, M.D., W.C. Conway, D.A. Haukos, and D. P Collins. Seed Bank Potential of Moist-soil Managed Fallow Rice Fields on the Upper Texas Coast.

Whitson, M.D., W.C. Conway, D.A. Haukos, and D. P Collins. Plant Community Composition Response to Moist-soil Management in Fallow Rice Fields on the Upper Texas Coast.

Whitson, M.D., T. V. Riecke, W.C. Conway, D.A. Haukos, and D. P Collins. An Assessment of Waterfowl Hunter Species Identification Success at Upper Texas Coastal Refuges.

Whitson, M.D., W.C. Conway, D.A. Haukos, and D. P Collins. Forage Production and Availability for Waterfowl Under Various Moist-soil Management Regime

TEACHING/LECTURES

Guest Lecturer: Texas Tech University Lubbock, TX Fall 2014
-Invited guest lecturer for Waterfowl Ecology (NRM 5316), subject: Waterfowl Diseases
-Invited guest lecturer for Waterfowl Ecology (NRM 5316), subject: Moist-soil Management

Guest Lecturer: Texas Tech University Lubbock, TX Fall 2016
-Invited guest lecturer for Waterfowl Ecology (NRM 5316), subject: Waterfowl Diseases
-Invited guest lecturer for Waterfowl Ecology (NRM 5316), subject: Necropsy Lab Techniques
-Invited guest lecturer for Waterfowl Ecology (NRM 5316), subject: Moist-soil Management

Teaching Assistant: Texas Tech University Lubbock, TX Spring 2023
-Lecturer and Lab TA for Population Dynamics (NRM 4308 and 5308)

PROFESSIONAL PRESENTATIONS

Whitson, M.D., B.A. Grisham, W.C. Conway, C.A. Hagen, D.A. Haukos, and C. Villalobos. Sand Shinnery Oak Prairie Ecoregion Plant Community Composition Response to Various Spring Prescribe-Fire and Post-Fire Rest Regimes in Eastern New Mexico. 59th Annual Meeting of The Texas Chapter of the Wildlife Society Meeting. Houston, TX. February 22, 2023 (P, O)

Whitson, M.D., B.A. Grisham, W.C. Conway, C.A. Hagen, D.A. Haukos, and C. Villalobos. Habitat Selection and Nest Success Response by Lesser Prairie-Chicken to Prescribed Burning and Grazing Treatments. 54th Annual Meeting of The Texas Chapter of the Wildlife Society, Corpus Christi, TX. February 14, 2020 (P)

Whitson, M.D., B.A. Grisham, W.C. Conway, C.A. Hagen, D.A. Haukos, and C. Villalobos. Lesser Prairie-Chicken Nest Success and Habitat Selection Response to Various Fire and Grazing Regimes in Eastern New Mexico. 33rd Prairie Grouse Technical Council Biennial Meeting. Bartlesville, OK, November 4-7, 2019 (P)

Whitson, M.D., B.A. Grisham, W.C. Conway, C.A. Hagen, D.A. Haukos, and C. Villalobos. Lesser Prairie-Chicken Nest Success and Habitat Selection Response to Various Fire and Grazing Regimes in Eastern New Mexico. 70th Annual Meeting of the Texas Section of the Society of Range Management, Kerrville, TX. October 10, 2019 (P)

Whitson, M.D., W.C. Conway, D.A. Haukos, and P. Walther. Use of Moist-Soil Management Techniques for Wintering Waterfowl in Fallow Rice Fields on the Upper Texas Coast. 8th North American Duck Symposium, Winnipeg, Canada. August 28, 2019 (P, O)

Whitson, M.D., W.C. Conway, D.A. Haukos, and P. Walther. Use of Moist-Soil Management Techniques for Wintering Waterfowl in Fallow Rice Fields on the Upper Texas Coast. 54th Annual meeting of The Texas Chapter of the Wildlife Society, Montgomery, TX. February 20, 2019 (P, O)

(*Clearance Cottam Oral Presentation Award Competition*)

Whitson, M.D., B.A. Grisham, W.C. Conway, C. A. Hagen, D. A. Haukos, and R. Howard. Lesser Prairie-Chicken Nest Success and Habitat Selection Response to Various Fire and Grazing Regimes in Eastern New Mexico. 69th Annual Meeting of the Texas Section of the Society of Range Management, Lubbock, TX. October 11, 2018 (P) Whitson, M.D., T.V. Riecke, W.C. Conway, D.A. Haukos, and P. Walther. Waterfowl Identification Success by Duck Hunters on The Upper Texas Coast. 53rd Annual Meeting of The Texas Chapter of the Wildlife Society, San Antonio, TX. February 18, 2017 (P)

Whitson, M.D., T.V. Riecke, W.C. Conway, D.A. Haukos, , and P. Walther. Waterfowl Identification Success by Duck Hunters on the Upper Texas Coast. 52nd Annual Meeting of The Texas Chapter of the Wildlife Society, San Antonio, Texas, February 19, 2016 (P)

Whitson, M.D., W.C. Conway. D.A. Haukos and D.P. Collins. 2016. Seed Bank Potential of Moist-Soil Managed Fallow Rice Fields on the Upper Texas Coast. 52nd Annual Meeting of The Texas Chapter of the Wildlife Society, San Antonio, Texas, February 19, 2016 (P)

Whitson, M.D., W.C. Conway. D.A. Haukos and D.P. Collins. Seed Bank Potential of Moist-Soil Managed Fallow Rice Fields on the Upper Texas Coast. 7th North American Duck Symposium, Annapolis, Maryland February 4, 2016 (P)

Whitson, M.D., T.V. Riecke, W.C. Conway, D.A. Haukos, and P. Walther. Waterfowl Identification Success by Duck Hunters on the Upper Texas Coast. 7th North American Duck Symposium, Annapolis, Maryland February 4, 2016 (P)

Whitson, M.D., W.C. Conway, D.A. Haukos, and D.P. Collins. Seed Bank Potential of Managed Wetlands on the Upper Texas Coast. 6th Texas Tech Annual Biological Sciences Symposium. Lubbock, Texas. April 11, 2015 (O)

Whitson, M.D., W.C. Conway, D.A. Haukos, C.E. Comer, and D.P. Collins. Vegetation and Waterfowl Response to Temporal Inundation Variation in Moist-Soil Managed Fallow Rice Fields on the Upper Texas Coast. 49th Annual Meeting of The Texas Chapter of the Wildlife Society, Houston, Texas. February 21-23, 2013 (P)

Whitson, M.D., W.C. Conway, D.A. Haukos, C.E. Comer, and D.P. Collins. Vegetation, Invertebrate, and Waterfowl Response to Moist-Soil Management on the Upper Texas Coast. Anahuac National Wildlife Refuge, Anahuac, Texas, February 17, 2012 (O)

PRESENTATION AWARDS

2019 Don Pendleton Memorial Collegiate Award. 70th Annual Meeting of the Texas Section of the Society of Range Management, Kerrville, TX. (*Poster Presentation*) 3rd Place.

2018 Don Pendleton Memorial Collegiate Award. 69th Annual Meeting of the Texas Section of the Society of Range Management, Lubbock, TX. (*Poster Presentation*) 1st Place.

2016 Best Poster Presentation. 52nd Meeting of the Texas Chapter of The Wildlife Society, San Antonio, TX (*Poster Presentation*) 2nd Place.

RESEARCH PROPOSALS AND GRANTS

Tile: Ecology of Isolated Lesser Prairie-Chicken Populations in Southeastern New Mexico
Focus: LEPC Population Genetic Connectivity, Parasitology, and Disease Exposure
Authors: B. Grisham, A. Gregory, C. Boal, N. McIntyre, W. Conway, K. Bondo, **M. Whitson**
Agency: Center of Excellence for Hazardous Materials Management (CHEMM)
Amount: $289,000 *Submitted November 1, 2021

*It is against university procedures for students to be listed as official principal investigators on submitted proposals. I co-authored this proposal with principal investigators, Dr. B. Grisham and Dr. W. C. Conway

CERTIFICATIONS

Current

-State of Texas: DPS: ATV Safety Certification	1999 Texas DPS (no expiration date)
-Rocket Net Certification	2014 DOI USFWS (no expiration date)
-Motorboat Operator Certification Course	2011 DOI USFWS (no expiration date)
-Airboat Operator Certification	2011 DOI USFWS (no expiration date)

- **With >40 hours airboat operation time completed meets independent pilot requirements**

-Ag Tractor Safety Certification Course	2011 DOI USFWS (no expiration date)
-Skid Steer Safety Certification Course	2011 DOI USFWS (no expiration date)
-Backhoe Safety Certification Course	2011 DOI USFWS (no expiration date)

Past Certifications Held Needing Renewal

-ATV and UTV Certification	2011 DOI USFWS
-I-100 Wildland Firefighter Training	2009 DOI NPS
-I-130 Wildland Firefighter Training	2009 DOI NPS
-I-190 Wildland Firefighter Training	2009 DOI NPS

PROFESSIONAL ACTIVITIES AND SERVICE

National Chapter of The Wildlife Society	2011 to present
Southwest Section of The Wildlife Society	2011 to present
Texas chapter of the Wildlife Society	1995 to present

RELEVANT COURSEWORK

Texas Tech University:

UAS Drone Piloting, Applied Statistics in Biosciences, Raptor Ecology, Advanced Habitat Selection Analysis and Assessment, Shorebird Ecology, Watershed Management, Applied Regression Analysis, Applied Geospatial Imaging Systems and Analysis, Advanced Wetland Management, Wildlife Habitat Selection and Management, Advanced Grazing Herd and Range Management Techniques Ecology and Conservation of Natural Resources, Range Plant Identification, Range Plant Ecology, Big Game Ecology, Principals of Waterfowl Management, Mammalogy, Upland Game Ecology, Fire Ecology and Management, Comparative Anatomy of Game Animals, Range-Wildlife Habitat Management, Principals of Range Management, Range Improvements, Natural Resource Policy and Planning, Wildlife Techniques, Wildlife Populations Dynamics, Plant Physiology, Ornithology

Stephen F. Austin State University:

Wetland and Wildlife Management, Shorebird Ecology and Management, Diseases Management in Wild Animals, Theoretical Design, Non-Game Wildlife Ecology, Biometrics, Introduction to GIS and Geospatial Analysis, Research Methods in Forestry, Forest and Range Ecological Concepts, Regional Silviculture

HONORS & SCHOLARSHIPS

-2019 Don Pendleton Memorial Collegiate Award. 70th Annual Meeting of the Texas Section of the Society of Range Management, Kerrville, TX. October 10, 2019

-2018 Don Pendleton Memorial Collegiate Award. 69th Annual Meeting of the Texas Section of the Society of Range Management

-52nd Annual Meeting of The Texas Chapter of The Wildlife Society 2nd Place Poster Award

-Phi Kappa Phi National Honor Society

-Golden Key National Honor Society

-2021-2024 Pendleton-Rogers Endowed Scholarship in Range and Wildlife Mgt. $32,000

-2021-2023 Elo and Olga Urbanovsky Assistantship $18,000/year

-2020 Fern Lee "Missy" Finck Endowed Graduate Scholarship $1000/year

-2007-2008 Agricultural Sciences and Natural Resources Dean's Honor List

-John R. and Kathryn Hunter Endowed Scholarship $500/year

-Pendleton-Rogers Endowed Scholarship $1,200/year

-Houston Livestock Show and Rodeo Endowed Scholarship $1,500/year

PROFESSIONAL ANIMAL CAPTURE/HANDLING EXPERIENCE:

-Lesser prairie-chickens: captured, banded, collected biological tissues (including soft tissue, blood samples, blood smears, and cloacal swabs) from male and female lesser prairie-chickens, fitted males and females with GPS PTTs following approved care and handling guidelines

- Personally, banded and processed > 100 individuals and deployed > 50 PTTs

-Captured on lesser prairie-chickens

-Participated in collaborative project radio tracking for collared mule deer in west Texas to estimate fawn survival, home range, and habitat use

-Volunteered with New Mexico Game and Fish on pronghorn antelope capture, assisted with animal capture and handling, morphological data collection, and animal translocation

-Volunteered with prairie chicken capture and morphological data collection in Kansas

-Assisted with black-necked stilt (adult and chick) capture and handling, bird banding, and brachial blood collection used to estimate lead exposure rates via blood-lead concentrations

- Personally, banded, collected tissues and morphometrics from >100 individuals

-Captured, banded, and collected biological tissue samples from mottled ducks to quantify blood lead contamination

- Personally, collected samples from >200 individuals

-Assisted with federal summer Mottled duck and whistling duck capture and banding program

- Personally, banded > 400 waterfowl and > 25 other birds

-Captured, banded, secured and removed radio telemetry transmitters on Bobwhite quail

- Personally, banded and deployed transmitters on > 90 quail

-Captured, banded, and collected brachial blood samples from snowy plovers for DNA analysis

- Personally, processed > 40 snowy plovers

-Participated in multiple songbird mist netting events

-Assisted in conducting small mammal trapping for base line inventory study