

JACK KAUPHUSMAN

(WILDLIFE ECOLOGIST/ SPATIAL ANALYST)

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CERTIFICATIONS

- Associate Wildlife Biologist Certification (The Wildlife Society)
- GIS Certification (APSU GIS-Center)
- Floodplain Management and Protection of Wetlands (IS-0727) Certification (FEMA)
- Habitat Suitability Modeling in R (Udemy)
- Remote Sensing in Google Earth Engine (Udemy)
- Water Quality Monitor (Izaak Walton League of America)
- Desert Tortoise Field Techniques (Desert Tortoise Council)

TRAINING

- Burrowing Owl Project Clearance Training-Part 1 (AZGFD)
- Mexican Spotted Owl Survey Training (USFWS)
- Chiricahua Leopard Frog Training (AZGFD) - PENDING
- Basics of NEPA and Sect 106 (Advisory Council on Historic Preservation)
- AZGFD Environmental Review Tool



EDUCATION

Master of Science | Austin Peay State University
AUGUST 2018 – AUGUST 2020

GPA: 3.89

Thesis Project: Under the advising of Dr. Gienger, at Austin Peay State University, I finished my graduate thesis, where I investigated the habitat selection differences among and between a population of Western Cottonmouths (*Akistrodon piscivorus*) found within a riverine slough wetland in Cheatham County, Tennessee. I created a GIS database to collect habitat data using ArcGIS Collector. After, I quantified the selection features of the population, and used multivariate analyses and machine learning techniques to identify specific habitat preferences among the population.

Related coursework: Biological Research and Methods (4cr), Ichthyology (4cr), Ornithology (4cr), Plant Taxonomy (4cr), Regression Analysis (4cr), Advanced Data Analytics (4cr), Wetland Plants (1cr), Herpetology (4cr), and Thesis (7cr)

Bachelor of Science | Minnesota State University, Mankato
AUGUST 2014 – MAY 2018

GPA: 3.42

Undergraduate Research Project: Conducted a study with the advising of Dr. John Krenz to investigate the population interactions of implementing the Mexican gray wolf as a predator to the invasive feral hog in Texas.

Related coursework: Vertebrate Ecology (4cr), Plant Community Ecology (4cr), Wetland Ecology (4cr), Biostatistics (4cr), Animal Diversity (4cr), Animal Behavior (4cr), Conservation Biology (3cr), Global Change Biology (3cr), Diagnostic Parasitology (4cr), Animal Physiology (3cr), Introduction to GIS (4cr)



EXPERIENCE

Wildlife Specialist: HDMS Systems | Arizona Game & Fish Department
SEPTEMBER 2020 – CURRENT

40HR/WK

- Maintains, updates, and further develops the HDMS AWS web-service r shiny applications and ArcGIS ecosystem (i.e., Environmental Review Tool, HDMS Dashboard, SCL App, and currently building the HDMS Arizona Field Guide)
- Organizes, maps, compiles, interprets, and updates Arizona's special status wildlife species occurrence records for inclusion into the HDMS Database
- Performs data requests in R and SQL from the HDMS database to stakeholders to be used for Environmental Assessments, ESA reviews and potential listings, and academic research
- Performs write-ups on special status species occurrences to the NatureServe Biotics application, which includes describing their distribution, biology, taxonomy, and potential status within the state

PRESENTATIONS

- o Master Thesis Presentation, 2020
- o SE-PARC Conference, 2020
- o Tennessee Herpetological Society Meeting, 2019
- o Pit-Viper Conference, 2019
- o APSU Graduate Thesis Proposal, 2018
- o Fish and Wildlife Service Region 3 Conference, 2018

SOFTWARE EXPERIENCE

- o ESRI (ArcPro, Survey123, ArcGIS Online, Arc Collector)
- o PostgreSQL & SQL
- o QGIS
- o R, RStudio, Rmarkdown, & R Shiny
- o Google Earth Engine
- o Microsoft Office
- o Git
- o HTML & CSS
- o Linux (Red Hat & Ubuntu)
- o iNaturalist

LAB EXPERIENCE

- o Water Quality Testing
- o Microscopy
- o Micro-pipetting
- o Spectrometry
- o Chromatography
- o PCR & Electrophoresis

SURVEY EXPERIENCE

- o Western cottonmouth
- o Timber rattlesnake (MN-T)
- o Copper-bellied watersnake (TN-T)
- o Gila monster (AZ-T)
- o Double-crested cormorant
- o Black tern (WI-T)
- o Great blue heron rookeries
- o Canada geese
- o Rust-patched bumblebee (E)

- Performs quarterly updates on the HDMS applications, feature services, and data exchanges with the Game & Fish Regions and Arizona federal agencies
- Provides job-related training to HDMS and other Department personnel, including training in wildlife distribution and interpreting raw field forms for special status wildlife
- Conducts field surveys for special status species tracked by the HDMS Division

Wetland Scientist | Austin Peay State University GIS-Center

JANUARY 2020 – AUGUST 2020

40HR/WK

- Designed and implemented a wetland survey to map wetlands for Fort Campbell Military Base in KY/TN
- Used remote sensing with aerial photographs and DEM rasters to initially identify potential wetlands and their hydrologic connectivity for the base
- Created surveying application using ERSI Survey123 and ArcGIS Collector to collect field observations and map wetlands
- Delineated wetlands using the wetland characteristics of hydric soils, hydrology, and hydrophytes based on the USACE Wetland Delineation Manual 1987 guidelines
- Maintained a database for collected data on ArcGIS Online and created an ArcGIS Dashboard
- Created geospatial USACE wetland report for the Ft. Campbell clients
- Oversaw one graduate student and two undergraduate students from APSU

Graduate Teaching Assistant | Austin Peay State University Biology Department

AUGUST 2018 – DECEMBER 2019

20HR/WK

- Instructed fifty undergraduate students per academic semester teaching the general biology lab for the university
- Graded weekly lab assignments and quizzes
- Directed and coordinated with fellow Graduate Teaching Assistants and undergraduate coworkers with laboratory preparations each week
- Prepared materials, chemicals, and biological organisms needed for the general biology lab experiments

GIS Field Technician | Austin Peay State University GIS-Center

MAY 2019 – AUGUST 2019

40HR/WK

- Conducted field collection, using ArcGIS Collector, and analyzed geospatial data on the ADA compliance of Montgomery County, TN sidewalks
- Oversaw three undergraduates while conducting fieldwork
- Maintained and organized the geodatabase using ArcGIS Online and ArcPro
- Performed the spatial analysis using ArcMap, R, and Microsoft Excel for sidewalk compliance and conditions
- Constructed the report and maps of the state of sidewalks for the county

Biological Technician | USFWS: Upper Miss. Wildlife and Fish Refuge

MAY 2018 – AUGUST 2018

40HR/WK

- Conducted forest inventory in teams of four, where we collected forestry and habitat data, using ArcGIS Collector, on the newly acquired land purchased by the USFWS

- Northern long-eared bat (E)
- Piebald Madtom (TN-SC)
- Tree Inventory
- Miss. Aquatic plants
- Wetland plants
- Southeast & Southwest Herpetofauna surveys
- Avian surveys
- Grassland surveys
- Wetland & Riparian Habitat

POLICY

- Clean Water Act sect 404
- Endangered Species Act sect 7
- National Environmental Policy Act EA & EIS
- Migratory Bird Act

FIELD WORK

- Plant & Wildlife Identification (Midwest, Southeast, & Southwest)
- Wildlife handling
- Transects for population densities
- Mark-recapture, and wildlife trapping
- Assisted with radiotelemetry & mist-netting
- Fish collecting (ex: seining, boat/backpack-shocking, & snorkeling)
- Invasive species removal
- Wetland delineation

- Performed and assisted in routine wildlife census surveys for threatened and endangered species such as the rusty-patch bumble bee, Northern long-eared bat, and black terns.
- Performed population surveys for species of concern such as the double-crested cormorants and variety of waterfowl species
- Performed aquatic vegetation surveys for the Upper Mississippi River, specifically surveying wild celery densities for waterfowl resources
- Helped the Wisconsin DNR with Canada geese banding along the Upper Mississippi River
- Conducted tree regeneration surveys with the MN Conservation Corp
- Posted boundary signs for the newly required wildlife refuge lands
- Performed wildlife habitat restoration projects on Minnesota prairies, wetlands, sandbars, and forests
- Operated company vehicles, trailers, and boats.

Park Ranger Intern | MNDNR at Great River Bluff State Park

MAY 2017 – AUGUST 2017

40HR/WK

- Delivered proficient customer service to guests at the park by educating them on the flora, fauna, park attractions, and rules
- Performed accounting and maintained a guest demographic database in Microsoft Excel
- Maintained the parks campsites and hiking trails by mowing and removing fallen trees
- Helped with restoration projects, such as seeding the prairie and removing invasive species within the park
- Constructed signs and installed fencing if damaged
- Operated a 1-ton dump truck, company vehicle, tractor, and ATV
- Performed security duties during evening hours at the park campsites
- For my internship project, I mapped locations and translocated the state threatened timber rattlesnakes (*Crotalus horridus*) to safer areas at the park

Zookeeper | Reptile Amphibian Discovery Zoo

DECEMBER 2015 – SEPTEMBER 2016

20HR/WK

- Cared for 200 individual animals such as different species of crocodilians, venomous and constricting snakes, turtles, tortoises, lizards, amphibians, fish, and birds
- Maintained qualitative and quantitative records to ensure proper diets of food and water, provided enrichment activities, and evaluated reproductive behavior, minor injury, illness, and delivered minor medical treatments if necessary
- Maintained and helped construct new enclosures
- Created and conducted daily thirty-minute educational presentations to twenty-five to fifty guests of all ages each day
- Oversaw, mentored, and provided work direction to four interns and two volunteers on daily zoo-keeping duties