

- ANIS ABMS ~ SIMULATE RANDOM UNREPORTED DEATHS BIASING PARAMETER ESTIMATION

* SINKAS LAND COVER MODEL

COURTNEY → ASSISTANT CHIEF OF RESEARCH

↳ ROLE IN DEER PROJECT (POC)

- WHAT SPECIFIC DISTRICTS NEEDS ARE?

* NLCD INTO SHINYAPP

* SET UP EXCEL MODEL
MEET W/ COURTNEY

↳ DEER COMMITTEE MEETINGS (ADCNR)

- SURVEYS, RESEARCH NEEDS, ANNUAL REPORTS
- DISTRICT SUPERVISORS, COORDINATORS, CHAIRS, BIOLOGISTS

• URBAN DEER POCKETS → HUNTSVILLE GOING TO BE ISSUE W/ EXPANSION (CWD/COLLISION)

• DIFFICULTY: ECONOMICALLY FEASIBLE → LIMITED TIME / RESOURCES

↳ STATEWIDE / PROGRAMMATIC

• POPULATION, DENSITY, ETC.

↳ A LOT OF EFFORTS DONE REGIONALLY (REQUIRES EXPERTISE)

• GOAL: DEFENSIBLE DECISIONS → NOT ACCURATE / PRECISE

↳ ACTIONABLE INSIGHTS

• MOVED AWAY FROM CHECK STATIONS AT EVERY HUNT

• MANDATORY CHECK → WMAS EVERY WEEKEND (11 HOURS WORTH)

• WHAT ELSE IS AVAILABLE? (DATA SHARE) → DATA AVAILABLE

↳ POINT (L/R) # POINTS

• DEER CLUB = WMA

• WEATHER DATA?

• WMA DATA INCLUDES AGE + REPRODUCTION → INCOMPLETE, MISMATCH, INPUT

WHAT QUESTIONS? → WHAT CHALLENGES?

→ TIMELINE? TIME FRAME FOR DATA →

• DMAP = SAME INFO AS WMA

↳ GIVEN DEER MNGMNT RECS + PLANS

↳ PROVIDE JAWBONES + INFO

↳ PRIVATE LAND BIOLOGISTS HANDLE
PRIVATE DMAP

- WEBSITE, PUBLIC MEETINGS, CALL AGENCY

- ADDITIONAL DOE TAGS → DATA

- HISTORICALLY → 100 ACRES; NA ACREAGE AS OF 6 YEARS AGO

★ LOOK IN DIGEST → LOCAL DISTRICT

OFFICE

→ NRCS FOR HABITAT IMPROVEMENT

ABM AT COUNTY LEVEL

↳ FOCUS FOR DATA SHARE

FRED T. → LOW H PRESSURE (SOA)
HARDWOOD

BARBOUR → PINCH POINT STATION
GAMMIT DIFF HABITAT

WMAS CHOSEN → SHOULD
MAKE BIOLOGICAL SENSE + GOOD
DATA INPUT

↳ COUNTY / WMA = UNIT WHERE
DECISIONS MADE - ✓

- HUNTER PRESSURE

- ECOREGION - COMPLIANCE

(FARM BILL)

• HIGH-LEVEL
ANCNR

- CAPTIVE
BREEDER

- NO
REGULATION

★ DRAFT OF CHI MANUSCRIPT → OCT 15

- WHAT DATA COLLECT? ★ WHY? → FORTHUGHT VS INTENTION
- INTEGRATION OF HUNTER COMPONENT

Dissertation Chapter Outline

NCFDD

Rylee Tomey

CORE CURRICULUM

Chapter 1: Conceptual Synthesis and Perspectives on Population Modeling Tools and Decision Frameworks in Wildlife Management

Objective:

- Provide a synthesis of how wildlife population models have evolved, what analytic advances have emerged, and what limitations still exist especially in the context of deer management in the Southeast.

Main Points:

- Population models are central to setting harvest regulations and answering core management questions, but most agencies rely on a narrow range of tools.
- Review of traditional methods like SAK and SPR, matrix-based approaches, and recent growth in Bayesian state-space models and agent-based models (ABMs).
- Comparative summary across key factors like data needs, interpretability, cost, and adaptability.
- Overview of how newer platforms (e.g., R, GitHub, NetLogo, Shiny) and tools (e.g., ArcGIS Field Maps, Survey123) are changing what's possible (e.g., cloud computing)
- Gaps remain in reproducibility, flexibility, accessibility, applicability
- Introduce the need for pluralistic, modular frameworks - Ani's "Rule of 3" as a rationale for using multiple tools instead of relying on a single model - a 'bouquet' or 'toolbox'

Alternatives and Additions:

- Consider including qualitative feedback from biologists or analysts across multiple states to capture operational constraints and design preferences.

Chapter 2: Building a Modeling Framework for Deer Management

Objective:

- Build an adaptable population modeling framework using Alabama as the initial focus, centered around an ABM and designed for eventual transferability to other states or contexts.

- PUBLICLY AVAILABLE DATA FOR ALL 50 STATES
- DIFFERENCE BETWEEN WHAT SAY COLLECT VS WHAT AVAILABLE/INPUT
- ★ NO NOTIONS ON FEASIBLE ★ - WHY CANT HAVE USA HARVEST REPORTS?

GO IN W/ QUESTIONS

"INTERACTED W/ AGENCIES"

- HOW DO AGENCIES MAKE DECISIONS ABOUT HARVEST?
- MEETING W/ DEER BIOLOGISTS IVI → TRAVEL OPPORTUNITY

FUNDING EXPIRES 2026

↳ BASE ABM + ~~DO~~ WHAT HAVE, WHERE GO...

↳ FIELD WORK OF CHI → WHATS CURRENTLY AVAILABLE

~ 10 SE/MIDWEST STATES

• ASK STEVE/MARK FOR CONTACTS

* WEEKLY INCRIMENTS + NOTES → PROGRESS REPORT

• POSSIBILITY OF WORKSHOP VISIT AT AU (PAID)

ASK Qs OF GROUP

TITLE: DEER POPULATION MNGMT IN THE 21ST CENTURY

↳ NA MODEL OF CONSERVATION

↳ 20TH CENTURY = SLOW INCREASE, WORRIED ABOUT POP } CHANGING
VS 21ST CENTURY = DISEASES (ESP. CWD) SHAPING POP

• LOCALLY, DEFENSIBLE POP STRATEGY → SHARED CONCERNS/CHALLENGES

- HUNTER SATISFACTION - QDMA → BIG ANTILERS

- PRIVATE (DMAP) - HUNTER SURVEYS

- HUNTER PARTICIPATION*

HOW TO FIND FRAMEWORK TO ADDRESS ALL

FOR DIFF AGENCIES { • WHAT INFO COLLECTED? SOURCES? * STRUCTURE/FUNDS OF AGENCY
• WHAT ARE Qs? → USUALLY DEMOGRAPHIC

ANA. FRAMEWORK

• NEED DATA TO INFORM MODEL →

• FRAMEWORK TO INFORM MNGMT



• TURNING POINT FOR DEER MNGMT AND

• TECHNOLOGY = COLLECT AND PROCESS OF DATA

• DISEASES

! STANDARDIZED DECISION MAKING PROCESS

- WILDLIFE SOCIETY → BEISARE/DITCHKOFF

P1
INTRO
↓
CHALLENGES
↓

TECH/TOOLS

↓
CLEAR/STANDARD DIRECTION

P2

• HISTORY OF DEER MNGT

- URBAN DEER POP