**DISSERTATION\**

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| **10** | **Co-Advisor PhD Revive** | **06/13/25** |

* Dissertation = 3 big picture accomplishments
  + Don’t limit to easy/feasible
* ADCNR main objective: defensible method to set harvest numbers
  + Set of Qs for each agency related to concerns
    - Mostly the same Qs, especially within geographic regions
      * E.g., doe/buck ratio, age class
    - Shape methods / data / models used to produce outcomes
      * E.g., doe/buck = sensitive parameter in IBMs
* PhD project results / products:
  + “bouquet of tools”
  + Decision making framework
    - Based on publicly available data / commissioned studies / \_\_\_\_\_\_\_\_\_\_\_
  + Standardize the process (similar Qs for most state agencies)
* Set of Qs specific to ADCNR?
  + Limited by poor communication, however we will move forward with the idea that we are not limited by data sharing / availability from AL, and that ADCNR should come to us
    - Better decisions made by state agency = better assumptions, data, strategies
      * E.g., length / timing of harvest season
    - States with reported Qs / scenarios better than AL = product of agency collaboration with researchers (e.g., Missouri, Indiana, Minnesota)
      * Review annual deer population / management reports vs AL
    - Most deer population / harvest work and research funded by state agency
      * Focus of questions over time
  + Deer population management / research over time
    - 70s/80s: population increase
    - 80s/00s: ecology / physiology
    - 10s/20s: analytical methods/ technology
* What’s lacking? Replicable and reproducible methodology to address questions (Qs)
  + expertise in automated pipeline
  + technologies like cloud computing (e.g., shiny apps) increase accessibility
    - adaptive management iteration
  + this does not equal a black box
* Rule of 3: where any model can answer 2/3 of questions
  + Needs to be generalizable, accurate, precise, reproducible
  + Requires multiple methods / models to achieve state objectives
* Conceptual outline / synthesis paper (Chapter 1)
  + Appropriate steps for accomplishing questions / tools available
    - Whats been done, gaps, analytical improvements
      * Include perspective element
* Integration methods for citizen science data (Chapter 2/3)
  + Potential to sample (e.g., camera traps) around points
  + Processing may be difficult, complex, or even impossible
* Ani’s agent based / individual based models
  + Data is not limiting factor
  + ABM base = truth
    - Each aggregation of data = scenario

S1 - D:B = 5:1

S2 - D:B = 3/1

S3: Harvest Dates

S4: Harvest Length

* + Relative impact of scenarios
  + Participatory expert opinion from ADCNR
* Unlocking ABM from data restriction
  + Plug parameters ~ agency might want certain answers

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| **13** | **Chapter 1 Co-Advisor** | **07/06/2025** |

* Title: White-tailed deer population management in the 21st century
* Locally defensible population strategy
  + Shared concerns / challenges between agencies
    - Hunter satisfaction
    - QDMA – big antlers
    - Private – DMAP
    - Hunter participation
  + Framework to address all challenges and concerns
* North American Model of Conservation
* Change in focus / concern of agencies / researchers
  + 20th century = worries above population
    - Trend in slow increase vs
  + 21st century = disease (especially CWD) shaping population
* For different agencies:
  + What info is collected? Sources?
  + Structure of agency? ~ funding of agency?
  + What are Qs? (usually demographic)
* Data needed to informed analytical framework
  + Better framework = better management
* We are at a turning point for deer management
  + Technology = ability to more efficiently and cost effectively collect and process data
  + Diseases and influence on populations
    - Standardized decision making process is missing
* Proposed travel to meet with deer biologists
  + Goal: 10 states in SE/Midwest
  + Go with questions - “interacted with agency”
    - “want to better understand”
  + What’s currently happening?
  + Will help guide the base ABM ~ what we have + where to go
  + Possibility of AU workshop for participants
* Proposed start to Chapter 1 outline by Ani
  + Paragraph 1: Introduction to challenges to technology and tools to clear / standard direction
  + Paragraph 2: history of deer management
    - Urban deer population