Post-Release Growth Rates of Translocated Alligator Snapping Turtles (Macrochelys temminckii)

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OBJECTIVES
1. Determine the nonlinear growth model which best fits released head-started Alligator Snapping Turtles (Macrochelys temminckii)
2. Determine if overall growth rates differ by release state (IL, LA, OK)
3. Determine if instantaneous growth rates (ΔGRs) for plastron length (PL) and mass differ by state, head start class, and release cohort

STUDY SITES
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METHODS
- Nonlinear modeling with fixed asymptotic size at 338.7 mm PL
- Only estimating the characteristic growth rate parameter (k)
- AIC to determine the best-fit model (von Bertalanffy, Logistic, Richards)
- Run separate models for each state

NONLINEAR GROWTH

For PL, LA turtles had the broadest distribution in AGR. For mass, OK turtles exhibited the broadest distribution. LA turtles grew faster in length and OK turtles increased more in mass. IL turtles consistently had the lowest ΔGRs with the narrowest distributions. By head-start age class, AGRs were highest for 2-year-olds and Johnson model exhibited similar growth

GROWTH RATES

ΔGRs were highest for PL in LA turtles followed by OK turtles then IL. For mass, LA and OK had similar AGRs for mass, IL had the lowest ΔGRs. A decrease in AGRs for PL and mass as head-start age increased from 2- to 4-year-olds. LA had consistently higher AGRs for PL at all head-start age classes. IL showed the lowest ΔGRs for all head-start age classes. The rate LA turtles are growing in PL for 2-year-old turtles is probably driving the differences. AGRs decrease with age whereby 4-year-old turtles for all states are roughly equal

CONCLUSIONS
- Growth rates for LA and OK were double that of IL
- Greatest growth rates in length in LA and mass in OK
- Turtles head-start class had the greatest effects on AGR
- Low growth rates in IL predict a delay in sexual maturity

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