RESULTS

Shell Size and Shape
Shell morphology only partially predicted sex and stage of turtles (Figure 1). Shell shape best defined sex and shell size best defined stage. There was considerable overlap between sexes, thus shell angles alone were not a reliable indicator of a turtle being male or female.

Growth Curves
Of the five growth curve models compared, the Schnute-Baker model was most appropriate for carapace length (Figure 2) and the von Bertalanffy growth model for plastron length (Figure 3). Males and females differed in growth, especially in plastron length for which females grew slower than males.

Change in Instantaneous Growth
There was insufficient evidence to support our hypothesis that woody vegetation removal affected growth. In both top models for carapace growth and plastron growth the effects of pre and post vegetation removal were not significant.

METHODS

• We used morphometric data collected on 395 individuals over 17 years.

• Turtles were sexed when captured by examining tail size, eye color, and shell shape.

• To examine how males, females, and juveniles differ in shell size and shape, we performed a discriminant function analysis using 11 morphometric traits.

• We selected nonlinear growth curve models for plastron and carapace length and then modeled growth in males and females.

• We calculated the instantaneous growth rate for individuals recaptured before (n=49) and after (n=122) woody vegetation removal and developed generalized linear mixed-effects models.

CONCLUSIONS

• Female box turtles at South Shore State Park grow slower than male turtles and mature with a shorter carapace length.

• Shell shape can predict sex, but there is overlap between the sexes. Shell size is the best predictor of life stage.

• We did not find evidence that growth changed following vegetation removal, but the hypothesis should be explored in more detail.