

Aging Bias and New Criteria for Aging South Texas White-tailed Deer

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Aging white-tailed deer by tooth replacement and wear (TRW) began with Severinghaus' paper published in 1949. Since then, many have criticized its utility and determined it to be ineffective for aging older deer. One critic stated that deer could only be placed accurately into 3 age classes: fawn, 1.5, and 2.5+ yr old. By using a large set of known-age mandibles collected from harvested deer marked during the South Texas Buck Capture Project, we wanted to independently evaluate the TRW method by identifying its biases and developing new criteria that allow scientists and managers to more accurately age deer harvested in South Texas.

In general, biologists using the Severinghaus method tend to over-age younger deer and under-age older deer. A test of TRW accuracy for 5.5–8.5+ yr olds ranged from 18 to 33%. We propose 5 separate classes based on TRW patterns from our known-age mandibles: fawn, 1.5, 2.5, 3.5–5.5, and 6.5+. To test this hypothesis, we used an independent set of 75 known-age mandibles that ranged from 2.5–9.5 yrs old. Twenty Texas Parks and Wildlife Department biologists placed these into the 3 older age categories with 72, 73, and 68% accuracy for 2.5, 3.5–5.5, and 6.5+ yr old deer, respectively.

These results are a valuable improvement from the Severinghaus TRW method and previous methods that lump all 2.5+ deer into one category. We believe the division of mature deer into these age categories is biologically useful because our data indicate peak antler growth occurs at 6.5 yrs.

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