

**Abstract:**

Accurate age estimation is important for understanding salmonid population dynamics and managing fisheries. In this study, we validated the age of Brown Trout *Salmo trutta* in four Driftless Area streams of southwestern Wisconsin using otoliths from known-age fish. We tagged and released known age-1 Brown Trout with coded wire tags in spring 2010–2015. Age-1 Brown Trout were identified by length and verified by identifying a single annulus in a subsample of otoliths. Brown Trout were recaptured 1 to 5 years after tagging to extract otoliths for aging and coded wire tags to identify known age. We used three readers to independently estimate age using otoliths for 249 Brown Trout, and we quantified bias and precision. Complete agreement (all readers assigned the same age) was 74%, partial agreement (at least two readers assigned the same age) was 98%, and consensus agreement with known age (all readers agreed on a consensus on age when assigned ages differed) was 93% with a coefficient of variation of 9.4%. Consensus agreement by age varied from 81% for age 3 ( $n = 31$ ) to 98% for age 1 ( $n = 132$ ) and 100% for age 5 ( $n = 6$ ). We conclude that using otoliths is a valid approach for estimating the age of Brown Trout ages 1–5 in productive streams as found in Wisconsin's Driftless Area and that the use of multiple readers and consensus agreement can improve aging accuracy.

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