



A study of scales from known-age trout  
by William Alvord

A THESIS Submitted to the Graduate Faculty in partial fulfillment of the requirements for the degree of Master of Science in Fish and Wildlife Management  
Montana State University  
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**Abstract:**

A total of 1055 scale samples from tagged, recaptured brown trout, rainbow trout, and eastern brook trout; and 129 scale samples from planted, marked rainbow trout were taken from Prickley Pear Creek, Montana, between June, 1949, and October, 1951. In addition, 69 scale samples were obtained from rainbow trout planted as fry in Savage Lake, Montana, and 42 scale samples were secured from known-age rainbow trout brood stock at the U.S. Fish and Wildlife Service Fish Hatchery, Ennis, Montana. Studies of these scales substantiated the scale method of aging wild trout and trout planted as fry or young-of-the-year fingerlings.

Marks which may have been caused by shocking, handling, and tagging were present on some scales from Prickley Pear Creek, but they did not occur with any uniformity or regularity.

Scales from the known-age rainbow trout brood stock had "annuli" in varying numbers and positions on fish of the same age. These "annuli" did not conform to the known age of the trout and were probably caused by the hatchery feeding practices and handling during spawning operations.

Annuli beyond the third were, in general, in closer proximity to one another and were more difficult to interpret. In many instances, erosion or absorption obliterated scale characters on the scales of older fish.

Annulus formation had been completed in 74.8 percent of the brown trout and 89.3 percent of the rainbow trout by the latter part of June in 1950. In 1951, 72.3 percent of the brown trout and 78.6 percent of the rainbow trout had formed new annuli by the second week in July. The failure of some trout to form new annuli during the period of annulus formation was almost always associated with little or no gain in total length.

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WILLIAM ALVORD

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Montana State College

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