

Abstract:

Since the late 19th century, the ectoparasitic copepod *Salmincola* cf. *edwardsii* has been observed infecting brook trout (*Salvelinus fontinalis*) in Wisconsin streams. A perceived increase in the incidence of *S. cf. edwardsii* infection across the state and the observation of an *S. edwardsii* epizootic leading to declines in brook trout recruitment in Ash Creek, Wisconsin, have raised concerns about the extent to which *S. edwardsii* threaten other populations of brook trout in Wisconsin streams. In 2013–2017, brook trout were inspected in 282 streams across the state to determine the distribution, prevalence, and maximum intensity of infection of adult female copepods whose morphology was consistent with *S. edwardsii*. *Salmincola* cf. *edwardsii* were present in 79% of streams and absent from 21%. Prevalence of infection ranged from 0.4 to 100% where the parasite was present. Maximum intensity of infection was low (1–5 *S. cf. edwardsii*) in 31% of streams, moderate (6–14) in 35% of the streams, and high (≥ 15) in 34% of the streams. Maximum intensity was high and prevalence exceeded 90% of brook trout in 9 streams, suggesting epizootics as observed in Ash Creek are uncommon. Our statewide distributional data are critical to understanding the scope of *S. cf. edwardsii* infection of brook trout in Wisconsin's recreational fisheries and will provide a baseline for ongoing and future investigations of *S. cf. edwardsii*–brook trout dynamics.

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