All about that bass: some trouble for rearing steelhead

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A new and emerging threat is lurking in the background as we work diligently to improve population viability of the threatened Middle Columbia River steelhead population. Climate induced stream warming is accelerating the upriver range expansion of smallmouth bass, increasing the likelihood of sympatry between smallmouth bass and steelhead. Smallmouth bass, as a non-native predator, have the potential to negatively impact steelhead populations through direct predation or competition, yet, few studies have quantified the degree to which smallmouth bass depress population vitality within invaded populations. We used a field-based before-after-control-impact experimental design to quantify the effect smallmouth bass have on the abundance of steelhead fry in their rearing habitat. We observed 4.8 times more steelhead in our impact reach (i.e. low smallmouth bass density) than we did in our control reach (i.e. high smallmouth bass density). Smallmouth bass isotope stomach content analysis provided evidence that the observed changes in steelhead abundance were driven by direct predation. Our results indicate smallmouth bass represent a significant threat to invaded populations of steelhead and may present a substantial obstacle to ongoing and future recovery efforts.