Life history diversity of steelhead parr in the Wind River, WA, as revealed by PIT tagging, instream PIT-tag detection, and trapping

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We are using Passive Integrated Transponder (PIT) tags to evaluate life history diversity of parr steelhead in the Wind River, WA. Smolt trapping has indicated that many steelhead parr were moving from headwaters areas to downstream reaches for additional rearing before smolting. Specific origin of these fish and factors influencing their movement were unknown. We PIT-tagged steelhead parr in Wind River tributaries and headwater areas in 2011 through 2013 and have deployed a network of instream PIT-tag detection systems to track movement of these fish. During 2013, we PIT-tagged age-0 steelhead with smaller PIT tags (9-mm vs. 12-mm), which will allow life-cycle monitoring from a known age. To date, we have detected downstream movement of tagged steelhead parr from headwater areas in spring, as we had with smolt-trapping efforts, but we have also detected substantial movement during summer and fall. Research or monitoring programs that rely strictly on trapping during spring may be underestimating production if a large proportion of steelhead migrate outside of the trapping period. With multiple years of PIT-tagging combined with instream-detection, smolt-trap, and adult-return data, we hope to evaluate differential survival to smolt and adult stages by parr life history expression, and to identify factors that influence parr movement.