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**Presentation Title: Migration Mortality and Overshoot of Mid-Columbia Summer**

**Steelhead: What are the Next Steps for Monitoring and Management?**

Abstract for the 2018 Pacific Coast Steelhead Management Meeting

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Detection data and survival estimates acquired from known-origin steelhead, originally tagged with Passive Integrated Transponders (PIT tags) as juveniles in Mid-Columbia streams, indicate substantial adult migration mortality. For example, the recent 5-year mean estimated conversion from Bonneville Dam to the South Fork John Day River is 47%; coincidentally the 5 year conversion rate for Fifteenmile Creek steelhead is also 47%. This mean estimate indicates that more than half of the adults arriving at Bonneville Dam either die or stray to a non-natal stream. Detection data within the John Day River basin suggest little to no in-basin straying, and presumed minimal fishery mortality. Mortality during migration through the Mainstem Columbia appears to be the largest contributor to the low observed conversion rates. Overshooting of natal tributaries by adult steelhead is common for the John Day, Umatilla , and Fifteenmile Creek populations. Reference data for conversion rates are not available from other Oregon streams, leaving no clear ‘goal’ for expected conversion rates in the absence of hydrosystem and fishery impacts. Increased PIT tagging of tributary steelhead smolts along with increased monitoring infrastructure is necessary to quantitatively and precisely evaluate the response of conversion rate to proposed Federal Columbia River Power System management experiments (e.g., winter surface spill at McNary Dam). A larger pool of known origin returning adults would also facilitate individual marking with active tags (e.g., acoustic tags) to track migratory patterns at tributary junctions.