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**Presentation Title: Patterns of Iteroparity in Snake River Steelhead Trout**

Abstract for the 2018 Pacific Coast Steelhead Management Meeting

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Steelhead trout have the most diverse life history repertoire of the Pacific salmonids. Unlike most of the other anadromous members of the genus, steelhead are capable of iteroparity (repeat spawning), but Snake River populations have perhaps the lowest iteroparity rates known for steelhead. In the Columbia Basin, steelhead managers are increasingly interested in increasing incidence of iteroparity as a conservation measure. However, there is little population-specific information about repeat-spawning steelhead to serve as a baseline to guide and evaluate management. In this study, we take advantage of three unique data sets to elucidate important patterns and characteristics of repeat-spawning steelhead in the Snake River basin in the last seven years. Repeat spawners were overwhelmingly female and were found in all stocks. There were slight majorities of iteroparous fish that first spawned after a year in the ocean and that skipped a year between spawns. Small females were most likely to survive to repeat spawn. Growth between spawns declined for larger, older steelhead. Percentage of repeat spawners ranged from 0.7% to 2.6% for steelhead spawning in 2010-2015. Estimated abundance of repeat spawners doubled between 2010 and 2013 but then declined, lagging behind peaks in first-time spawner abundance. Therefore, conditions that promote survival to first spawning should eventually lead to more repeat spawners. Survival from first spawn to post-spawn emigration increased during the study but survival in the Columbia River estuary and Pacific Ocean declined such that overall survival to second spawn varied little. We hypothesize that iteroparity in Snake River steelhead is constrained by the rigor of the spawning migration (distance, elevation, timing) combined with a lack of timely post-spawn re-fueling. Hence, survival to second spawn is low for Snake River steelhead and most kelts need a full year to recondition. These factors are important to account for in any management regime to increase the incidence of iteroparity.