Managing for diversity in *Oncorhynchus mykiss*: principles and challenges

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Life history diversity is a key characteristic of viable steelhead *Oncorhynchus mykiss* populations but the processes driving diversity within this species are still not well understood. Consequently, predicting life histories in particular settings, in response to restoration actions, or in anticipation of climate change remains a challenge. Here, we highlight progress in understanding two key components of diversity within the species: 1) variation in the timing of juvenile and adult anadromous migrations; and 2) factors underlying residency and anadromy. We discuss how an understanding of life history processes provides opportunities and challenges for management of steelhead populations at the landscape scale.