

Environmental affects on early male maturation and smolt quality in spring Chinook salmon

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The plan for developing a supplementation program for spring Chinook salmon in the Hood River includes experimental rearing of fish at 3 different facilities: Parkdale Hatchery (CTWSN), Carson NFH and Pelton rearing ladder (ODFW) in order to determine an optimal rearing strategy. Each facility combines a unique set of rearing conditions with variations in temperatures, feeding regimes, water flow and raceway design. These differences could result in varying rates of early male maturation and smolt development. An initial size check (n=300) was conducted in October of 2009 with more in depth physiology sampling starting in January and continuing through release in April. At each sampling point 25 fish from each treatment group were sacrificed. Size data, gill tissue (for determination of ATPase activity) and plasma (for the determination of IGF1 levels) were collected approximately bi-monthly. In addition, a large collection of fish (n=300) was obtained at release to assess plasma 11KT levels. The values were then used to determine the proportion of fish released that were early maturing males (minijacks). In this talk we will report on minijacks rates and ATPase activities of Hood River stock fish reared at Pelton, Carson and Parkdale as well as Deschutes stock fish reared at Pelton and Carson stock fish reared at Carson. We will attempt to provide insight into how differences in rearing resulted in differences in smolting and early male maturation.

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