Age Structure, Growth Rate, and Condition of *Margaritifera Falcata* (Gould, 1850), A Native Freshwater Mussel in West-Central Idaho[AFS]

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The western pearl mussel, (*Margaritifera falcate*, Gould 1850) is an ecologically important bioindicator of aquatic health because of its (1) responsiveness to environmental change, (2) widespread distribution, (3) dependence on salmonids as a host fish for distribution and survival, (4) sedentary life style after the glochidia stage, (5) visible annual

growth rings, and (6) long lifespan (> 100 years). Population structure and condition of *M. falcata* were assessed in Bear Valley Creek (BVC), Idaho 50 years after dredging activities and subsequent disturbances from restoration efforts had ceased. Mussels were collected, measured for length and weight, and aged from five randomly chosen reaches in BVC. Fewer juvenile mussels (~10 years) were observed and mussel distribution was sparser in the upper versus lower reaches in BVC. Mussel age ranged from 8-48 years, lengths ranged from 28-97 mm of which half were less than 60 mm, and overall growth rates averaged 1.28 $g \cdot yr^{-1}$. Growth patterns were not linear, but decreased with age from 3.90 $mm \cdot yr^{-1}$ (0-15 yrs) to 1.85 $mm \cdot yr^{-1}$ (15-50 yrs). Overall, BVC sustains a diverse population of *M. falcata*. However, mussel distribution ceased in the vicinity of the old dredge site and upstream. Potential reasons explaining the limitation in mussel distribution include (1) chemical constituents in the water needed to create shell material are limiting, (2) range of host fish may be limited, or (3) the physical disturbance from dredging and restoration activities may have buried or removed some mussels in the past delaying recolonization.