

Oral Presentation

BETWEEN A ROCK AND A SILTY PLACE:  
*MARGARITIFERA FALCATA* MUSSELS AND DAMS IN THE ELWHA RIVER

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Most of the Elwha River drainage has been blocked by dams since 1912, which have prevented upriver migration by salmonids and downriver transport of sediment since that time. As a result, the previously robust salmonid populations in the river have collapsed to a remnant in the few kilometers of river below the lower dam. In addition, scour from moving water has moved most fine sediment downriver and the river bed has become mostly boulders and cobble in the reaches below the upper dam. The native western pearlshell mussel *Margaritifera falcata*, which is common in other rivers near the Elwha, could potentially be affected by both these factors since its life cycle is closely tied to Chinook salmon and it lives by burrowing into the sediment. We examined the Elwha River below the upper dam for the presence and population structure of mussels. No mussels were found between the two dams. Several small populations of mussels were in the reach below the lowest dam. *Margaritifera falcata* is often long-lived, and the largest individuals may predate the dams. An abundant population of smaller individuals was found near the salmon rearing ponds which are connected to the lower river. These mussels may be native or have been introduced with salmon fry. All the mussel populations were in danger of extirpation due to construction activities and to the heavy sediment load expected to move downriver when the dams are removed. We transplanted individuals from key populations into a small tributary to shield them from burial in sediment. We will monitor them for the next several years as the Elwha recovers from dam removal, with the eventual goal of re-introducing them to the river.