
RELATIONSHIPS BETWEEN FISH AND BENTHIC COMMUNITIES: A CALL FOR MORE EXPERIMENTS IN THE CONTEXT OF ADAPTIVE MANAGEMENT

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Fish are important components of most freshwater ecosystems and can interact strongly with their prey, potentially driving changes in system structure and function. Less appreciated, however, is the reciprocal role of prey availability and quality in limiting and/or structuring fish communities. Understanding both sides of these interactions is critical for predicting changes to aquatic ecosystems as a result of species invasions, extinctions, and well-intentioned management practices. I will focus on fish-benthos relationships in streams and rivers with emphasis on salmonid-invertebrate interactions. First, I will argue that despite a large literature in this area, generalizations remain elusive because of broad differences in scale and study design. Next, I will present a food web approach (and case study from the Grand Canyon) that can help elucidate key pathways of interaction between fishes and their

prey. Finally, I will discuss the critical role of ecosystem experiments in management and argue that exciting opportunities abound in Montana for leading the way in science-based adaptive management of streams and rivers.