

Sampling to detect the impact of barriers on fish movement

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Abstract

With the recognition of the detrimental impacts of dams and weirs on native fish populations and the increased interest in fishways in Australia, there has been growing impetus to ensure river regulation agencies are responsible for mitigating the effects of their structures. Before committing considerable sums of money towards the construction of a fishway these agencies often require scientific evidence that the structure is having a measurable impact on migratory fish communities. To date there have been few studies in Australia which have scientifically demonstrated the impacts of construction of instream barriers on migratory fish communities. Most impacts have been identified from anecdotal evidence provided by ad hoc surveys or angler reports. However, recent studies have refined these earlier efforts using better sampling technology and methodology to show the impacts that weirs and dams are having on the fish communities of the target river systems. Utilising backpack and boat-mounted electro-fishers to effectively sample the whole fish community above and below impacting structures has enabled us to show convincingly to the operator that there is a requirement for some form of mitigating fish passage device. An outline of the sampling design, techniques and results from studies on the Shoalhaven (NSW), Pioneer and Burdekin Rivers (QLD) indicates the success of this type of study to identify the impacts of dams and weirs.

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