

HIDE AND SEEK, THE REPRODUCTIVE ECOLOGY OF THE POUCHED LAMPREY

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The pouched lamprey, *Geotria australis*, is one of four Southern Hemisphere lamprey species, and New Zealand's only freshwater representative of the agnathans. In New Zealand, migratory adult pouched lampreys form an important cultural fishery, and are considered a taonga (treasured) species by indigenous Māori. Presently, New Zealand pouched lampreys are classified as "Threatened - Nationally Vulnerable", with populations exhibiting a nationwide ongoing decline. However, current conservation efforts are hampered by the limited knowledge of their ecology in the freshwater environment, particularly with respect to reproduction. We present the first observations of a Southern Hemisphere lamprey species spawning sites and nesting behaviour. In the Okuti River catchment, Banks Peninsula, Passive Integrated Transponder (PIT) technology was used to successfully track adult pouched lamprey over two 15 month spawning migrations. The pouched lamprey appear to be unique in their spawning behaviour, forming monogamous pairs and creating nests beneath large boulders. Endoscope cameras were used to observe post-spawning nesting behaviours of lampreys and monitor egg development. It was found that both sexes of lamprey survive spawning for over 15 weeks and may exhibit some form of parental care or guarding of the eggs mass. These data highlight a substantial divergence in the reproductive behaviour between Northern and Southern Hemisphere lampreys, and provide knowledge crucial to the protection and conservation of the pouched lamprey in New Zealand and throughout their range.