



Stormwater and Urban Habitat Restoration

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The loss of habitat for wildlife through urbanisation is the number one threat to biodiversity worldwide and frequently eliminates the large majority of native species. Urban development directly reduces habitat, and fragments, degrades and simplifies habitat that remains. River and floodplain habitats are impacted by the direct removal of habitat and the downstream impacts of poorer water quality, superabundant urban runoff and erosion of waterway habitats.

In the last 20 years great progress has been made in protecting critical receiving waters such as Port Phillip Bay through stormwater quality improvements. Large numbers of stormwater treatment systems have been constructed to achieve these improvements. Habitat restoration has typically not been central to these systems. Whilst constructed wetland design guidelines (e.g. the Melbourne Water Wetland Design Manual) acknowledge the potential for constructed wetlands to provide some habitat, it is not a primary function of these systems.

Given the dramatic loss of habitat, critical threats to species in urban areas and the growing understanding of the role of green infrastructure in creating liveable cities, it is time to reconsider this. A constantly improving understanding of the habitat requirements of threatened species like Growling Grass Frog and Dwarf Galaxias, combined with innovative design and construction techniques have allowed us to apply a restoration ecology approach to create systems that treat stormwater, provide habitat and create urban forest.

The Merri-Edgars Creek wetland (in Moreland, Victoria) is a recent example of a restoration ecology design. The wetland provides habitats for locally native flora and fauna, whilst improving the quality of water entering the Merri and Edgars Creeks. Prior to European settlement ephemeral wetland environments would have been commonplace along waterways such as the Merri Creek. This project restores habitat that has disappeared from Moreland, increases floodplain biodiversity, improves water quality discharged to the creek, and provides a substantially upgraded asset to the local community.