

**Current Status  
Commenced**

**Project: 100082**

***Euastacus spinifer* (Heller 1865) and *Euastacus australasiensis* (H. Milne Edwards 1837),  
impacted by toxic urban pollution; mass mortality, recover and decline within two adjacent  
creeks Blue Mountains, New South Wales, Australia**

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## **Abstract**

Freshwater crayfish (family Parastacidae) are well distributed throughout eastern Australia with numerous species occurring in urban catchments. Creek systems draining urban catchments are impacted by number of different environmental stressors including, over harvesting, modified hydrology and pollution. Increasingly pollution from commonly used urban pesticides is devastating crayfish populations and the broader aquatic community.

In July 2012, over 1000 dead Giant Spiny Crayfish (*Euastacus spinifer*) were found in a two kilometre reach of Jamison Creek, Wentworth Falls, including within the Greater Blue Mountains World Heritage Area. A multi-agency investigation discovered the crayfish were killed by a termiticide, Bifenthrin, and that the effects extended beyond the crayfish to the entire aquatic macroinvertebrate community. The contaminant entered the creek via a conventional stormwater drainage system of pits and pipes, which provided a direct connection between the property at which the pesticide was over-applied and the creek 300m away. The pest control operators involved were prosecuted (St Lawrence et al. 2014).

In 2013 aquatic biological surveys were conducted in Jamison Creek and the next creek west Leura Falls Creek. Leura Falls Creek is of a similar size, flow rate and height above sea level, was unaffected by the Bifenthrin incident and used as a baseline for stream population comparisons.

In 2016 both creeks were resurveyed. Jamison creek showed significant recovery of the *Euastacus* population. Leura creek however, showed a significant decline in the *Euastacus australasiensis* population with mortalities being documented during the survey. Further investigation of Leura Falls Creek indicated the creek was polluted by concentrations of toxicants in sediments, including trace metals, hydrocarbon, PAHs and pesticides (synthetic pyrethroids).

Results of the surveys and investigations, together with water quality information and discussions on species population abundance, increase and decline are presented in this paper.

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