

'As pressures on rivers increase, we need to know where the refuges are, as these are the sources of recolonisation.'



Dr Belinda Robson

'POLO CLUBS' AND 'CASINOS' PROTECT BIODIVERSITY

Polo clubs and casinos could become new buzzwords in freshwater biodiversity, following work being conducted by Deakin environmental scientists.

They are using these terms to classify the refuges that river plants and animals use during disturbances such as drought, bushfire and land clearing.

The scientists behind the new classification system say it will help environmental managers identify different types of refuges and plan their response to changes in the habitat.

"As pressures on rivers increase, we need to know where the refuges are as these are the sources of recolonisation," says Dr Belinda Robson, a senior lecturer in freshwater biology at Deakin University. "This is where we will find river plants and animals regenerating after the disturbance."

"So we looked at how different refuges could come to exist in a landscape after a disturbance, and how they would support biodiversity after the disturbance was over."

"For example, the refuges that form by chance, such as after a bushfire, are classified as 'casino' refuges. 'Polo club' refuges are those where the refuge is exclusive – they are only useful for species that have a particular biological trait that allows them to survive in the refuge."

Other refuge types include 'arks' that are very predictable and hold most of the species; 'stepping-stone' refuges that are used only temporarily; and artificial or anthropogenic refuges such as artificial pools.

"Ark refuges are probably the most important because they're the ones holding the majority of the biodiversity," Belinda says. "So this might encourage people to make protecting the ark-type refuges a priority."

The study was commissioned by the Federal Government's National Water Commission, which is seeking preliminary guidelines about how to manage refuges.


The research team from Deakin's School of Life and Environmental Sciences also included Dr Edwin Chester, Associate Professor Brad Mitchell and Dr Ty Matthews.

REFERENCES:

B J Robson, E T Chester, B D Mitchell & T G Matthews (2008). Identification and management of refuges for aquatic organisms. *Waterlines Occasional Paper No. 14*, National Water Commission, Canberra, www.nwc.gov.au

FURTHER INFORMATION:

Dr Belinda Robson, School of Life and Environmental Sciences
E: belinda.robson@deakin.edu.au
www.deakin.edu.au/scitech/les/about/staff-profiles/display/index.php?username=brobson



Potential ark refuge in a stream in the Grampians National Park

Image: Belinda Robson