

Taro (*Colocasia esculenta* Schott): Effects of removal on the natural biodiversity of a fresh water wetland and implications for restoration of similar habitats.

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Summary The fringing vegetation along the Gingin Brook north of Perth is typical of riparian vegetation on the Swan Coastal Plain. Where the weed Taro (*Colocasia esculenta* Schott) invades, it completely displaces the native understorey. Work along the Gingin Brook has established successful control techniques for Taro (Brown and Brooks 2001) however removal exposes large areas of bare ground.

This current study revisits the fringing vegetation five years after the implementation of the Taro control program. The objective was to record floristic composition and cover over a site where initially, large areas of bare ground were exposed following Taro removal and to gain an understanding of the ecosystems capacity to recover naturally from such a disturbance event.

Before the initial treatment of the Taro population in December 2000, a permanent 20 m transect was established running from native vegetation into the dense infestation of Taro. Taro plants in ten 1 m x 1 m quadrats along the transect were counted and native and introduced species in the plots were assigned a Braun-blauquet cover value. In addition a series of permanent photo points were established.

Five years after initial control Taro had been eradicated completely and the annual and perennial weeds that moved into the site shortly after Taro removal had been displaced by native species including *Carex appressa* R.Br (Tall Sedge), *C. fascicularis* Boott (Tassel Sedge), *Melaleuca raphiophylla* Schauer (Swamp Paperbark) and *Eucalyptus rudis* Endl. (Flooded Gum), all spreading by seed often carried in water, and the fern, *Cyclosorus interruptus* (Willd.) H.Ito and *Persicaria decipiens* (R.Br) K.L. Wilson

(Native Knotweed), spreading rapidly by vegetative means.

Frequent disturbances that can expose large areas of bare ground, including flood events and falling and rising water levels, are natural processes in riparian systems. The dominant native plant species are often disturbance opportunists with dispersal mechanisms that allow for rapid colonisation of exposed ground (Middleton 1998). The rapid recovery we recorded in the fringing vegetation along the Gingin Brook was a natural response to a disturbance event.

The results of this study illustrate that native plant communities of riparian systems of the Swan Coastal Plain can recover naturally following large-scale removal of a dominant weed. The major implication is that in much of the remnant riparian vegetation of the region weed removal may be all that is required for successful restoration of native plant communities

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REFERENCES

- Brown, K. & Brooks, K. (2003). Managing *Colocasia esculenta* invading the fringing vegetation of a fresh water stream north of Perth. *Ecological Management and Restoration* 4 (1), 76-7.
- Middleton B.A (1998). 'Wetland Restoration, Flood Pulsing, and Disturbance Dynamics'. John Wiley and Sons, New York.