

# HERBICIDE USE FINDING THE BALANCE

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(TE ATIHAUNUI A PAPĀRANGI, NGĀTI  
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The use of herbicides and other toxins for removal of unwanted organisms within the native environment can be a very emotionally charged and controversial approach to restoration. Herbicides are used to control weeds, particularly large invasions, and have now become an essential management tool in many restoration projects. The herbicides glyphosate (the primary ingredient in Roundup®) and, to a lesser extent, metsulfuron (present in Escort®), are routinely used to control the invasive weed, grey willow, within our repo (wetlands). Without management, the grey willow can change the whakapapa (connections) of a repo, including:

- outcompeting native plants like wīwī (rushes), pūrekireki, pūrei (sedges), and harakeke (NZ flax). These plants prefer open, well-lit areas, but willows form thick and wide canopies that can completely shade them out
- encouraging different insect and aquatic animal species into the wetlands (usually introduced beetles, flies, zooplankton, and others), which in turn outcompete our native fauna and alter the food available to native birds and fish.

For some groups, including tangata whenua (indigenous people), the use of a toxin – even for control of an invasive species – can be regarded as hugely disrespectful and unsafe to the whenua (land), to the whakapapa of that whenua, and to the people. For other groups (who can also include tangata whenua) a certain level of comfort may be reached by using herbicide as a means to work towards a bigger aspiration for returning taonga species (native plants and animals of cultural significance). However, a decision in one area should not be taken as a blanket decision for elsewhere. Many groups work on a case-by-case basis, and may prefer to treat each control option as a new discussion, with new aspirations (even if they are similar to other projects), and as a means for exploring and discussing the development of new approaches to restoration.

No matter what is finally decided, the key consideration is that tangata whenua and the wider local community must be informed about proposed actions for restoration. Managers should show a commitment to listen to and work with them to find a path towards shared outcomes for:

- restoration of ecosystems
- the return, protection and enhancement of valued plant and animal species
- the protection and sustainability of human-nature relationships with that environment.

The restoration of Mangaiti Gully wetland in Hamilton, involved both herbicide and manual control.  
Photo: Beverley Clarkson





Pre-restoration planning visit to Maurea River Island.  
Photo: Beverley Clarkson



Kahikatea planting on Maurea River Island.  
Photo: Beverley Clarkson

This section explores some of the work that has been undertaken in this area with the involvement of tangata whenua. Two research projects evaluated the effects of herbicidal control on species that were valued by hapū (subtribes) and tribal members affiliated with the areas studied – terrestrial (land) insects in the Whangamarino Wetland, Waikato, and small aquatic (water) animals in a reserve of the South Taupō Wetland, Turangi. A third case study examined the use of herbicides for invasive plant control compared with non-herbicidal control on the Maurea River Islands, Waikato River.

The purpose of this section is to:

- provide learnings and findings related to different control methods
- help whānau (families), hapū, iwi (tribes), and communities with decisions on the future application of these methods in their respective rohe (region).

These collaborative efforts have resulted in the delivery of science-based guidelines, techniques, and tools to improve management and guide restoration of freshwater wetlands throughout Aotearoa New Zealand.

Maurea River Island, early stages of revegetation.  
Photo: Beverley Clarkson

