

# RIPARIAN REGENERATION & PRIVET CONTROL WORKSHOP

## HERBICIDES IN RIPARIAN AREAS - MAIN TAKE-AWAY MESSAGES:

1. You can not spray any herbicides or chemicals into standing surface water without an EPA 'Permit to Pollute' See: <http://www.epa.nsw.gov.au/your-environment/waste/waste-overview/licensing>
2. You must only use chemicals (herbicides and additives) registered for use in waterways within waterways – the problem is knowing what a 'waterway' is – 17+ definitions under various acts
3. You are well advised to err on the side of caution, and to be aware of the methods recommended in the EPA guidelines for weed control in riparian areas. Use multiple applications of low rates as suggested

### Chemicals Registered for use on Waterways:

Weedmaster Duo – Twin salt formulation of Glyphosate 360g/L which is about twice as effective as normal Glyphosate 360g/L

Roundup Biactive – Single salt preparation of Glyphosate 360g/L not as effective as the twin salt formulation

Synertrol Oil – Spray sticker and penetrant registered for use on waterways

The 'General Environmental Duty' under Section 25 of the Environment Protection Act reads:

*A person must not undertake any activity that pollutes, or might pollute, the environment unless the person takes all reasonable and practicable measures to prevent or minimise any resulting environmental harm.*

The EPA considers that allowing pesticides to enter surface or ground waters, escape from a property, cause harm to the environment, or cause harm to other people would be a breach of the Act.

# **BUSH REGENERATION**

## **The Bradley Method**

This method was developed by the Bradley Sisters in Sydney in the 1960s.

The main principles of the method are as follows:

1. Work from the best areas into the worst areas
2. Work at a pace set by the natural regeneration of the vegetation
3. Minimal disturbance

Problems with the Bradley Method:

- It only prioritises vegetation quality, and ignores individual species so it can overlook the importance of both rare native species in poor quality vegetation, or high priority small outbreaks of potentially difficult weeds.

## **Other Regeneration Strategies**

There are a number of alternative strategies which can be used in bush regeneration:

- Analysis of the site in terms of points, lines and areas.
- Halo effects around native plants
- Edge effects and edge closure
- Acclimitisation

## **RECOMMENDED BOOKS**

In addition to the resources provided on data sticks, we recommend the following for plant identification:

- Fairley and Moore *'Plants of the Sydney Region'*
- Harden *'Vegetative Identification of Rainforest Plants'*

# PRIVET CONTROL METHODS

## Riparian Areas

<b>Method</b>	<b>Details &amp; Benefits</b>	<b>Problems</b>
<b>Cut and Paint</b>	<ol style="list-style-type: none"> <li>1. Cut off trunk and apply herbicide immediately to the cut stump</li> <li>2. Instant gratification with removal of the entire weed</li> </ol>	<ol style="list-style-type: none"> <li>1. Herbicide must be applied immediately (within 30 seconds) to draw down into the roots</li> <li>2. Cut material needs to be removed from site as otherwise can wash downstream and cause damage to banks and bridges</li> <li>3. Cut material on ground makes access for weeding and followup difficult</li> </ol>
<b>Drill and Fill</b>	<ol style="list-style-type: none"> <li>1. Drill 8-12mm diam holes into trunks at 45 degree angles every 10cm around trunk, and put 3-5ml of herbicide into each hole. Registered for use with 100% or 50% herbicide but 10% seems to work fine.</li> <li>2. Leaves material standing so not on ground or able to be washed away in floods</li> <li>3. Plants die and defoliate over a period which allows understorey to acclimatise</li> <li>4. Not dependent on weather – can be done in conditions unsuitable for other methods</li> </ol>	<ol style="list-style-type: none"> <li>1. Requires expensive lithium ion cordless drill</li> <li>2. Can be difficult to access trunks especially in multi-trunked plants</li> <li>3. Batteries don't last long so for large sites multiple batteries required or on-site generator to recharge batteries</li> </ol>
<b>Snap and Squirt</b>	<ol style="list-style-type: none"> <li>1. Trunks snapped but not cut off, and herbicide applied to the snapped stem</li> <li>2. Better kill rate than cut and paint as attached foliage acts longer to draw herbicide into root zone.</li> </ol>	<ol style="list-style-type: none"> <li>1. Physically demanding to snap stems, and can only be done to small diameter trunks</li> <li>2. Snapped over trunks can be an obstruction to access weeds and for followup</li> </ol>
<b>Gas Gun, Splatter Gun, and Large Droplet Application Methods (10% glyphosate)</b>	<ol style="list-style-type: none"> <li>1. Any large droplet nozzles and equipment used to apply low volume high concentration herbicide</li> <li>2. Very fast, effective and cheap method</li> <li>3. Can be modified to be a precision droplet application method not just random squirting</li> </ol>	<ol style="list-style-type: none"> <li>1. Dripping onto understorey can cause damage to understorey plants</li> </ol>
<b>Foliar Spray</b>	<ol style="list-style-type: none"> <li>1. Fine spray droplets applied to the foliage of the weeds</li> <li>2. Best done with spray hoods to minimise spray drift.</li> </ol>	<ol style="list-style-type: none"> <li>1. Fine droplets are prone to drift and can kill non-target weeds (use hoods)</li> <li>2. Low concentration high volume methods mean large quantities of water are required</li> </ol>
<b>Frill and Fill</b>	<ol style="list-style-type: none"> <li>1. Frill trunks with cleaver, machete or similar, and apply herbicide to cut</li> <li>2. Does not require expensive and heavy drill</li> </ol>	<ol style="list-style-type: none"> <li>1. Cuts are open and herbicide tends to drip off rather than stay in the cuts – drill and fill is better</li> <li>2. Does use a blade so more dangerous to use than a drill</li> </ol>
<b>Tree Spear</b>	<ol style="list-style-type: none"> <li>1. Use chisel welded into gal pipe to make wounds and apply herbicide into each wound</li> </ol>	<ol style="list-style-type: none"> <li>1. More physically demanding to use a spear than either drill or blade.</li> </ol>
<b>Wick Wipe ('Tongs of Death')</b>	<ol style="list-style-type: none"> <li>1. Use BBQ tongs with sponges on tips soaked in herbicide to apply herbicide to weed foliage.</li> <li>2. Registered for use with 100% Glyphosate but 10% seems to work fine with most weeds.</li> </ol>	<ol style="list-style-type: none"> <li>1. Sponges disintegrate quickly with being drawn over stems and foliage</li> <li>2.</li> </ol>

## Weed Workshop at Wootton, November 2017: Summary by Peter Scaife

The workshop was led by Andrew Paget (a very experienced bush regenerator), and provided excellent advice on weed treatment for the work with the LLS project at Upper Karuah River.

The learnings from the workshop were:

- Permit 9907 is very flexible for environmental weeds
- Permit 7250 allows experimental trials on sites <1Ha, and with <500 plants
- Under Native Veg Act, up to 300 lineal metres of riparian zone can be treated each year
- Do things gradually, to allow for acclimatisation
- Use the double salt glyphosate, Weedmaster Duo (WD), instead of normal glyphosate (such as Roundup). From Andrew's experience, WD is 2x as effective, for 10% additional cost
  
- Andrew uses very simple tools, designed to minimise his work for weed removal
  - Carries into the bush a container of 500ml spray bottles filled with the chemicals to be used that particular session
  - Uses a vegetable scraper, purchased on the web from China for a few dollars delivered (he reinforced the handle with epoxy). Uses for all his scrape and paint treatment
  - Uses a meat cleaver (wide, heavy blade) also purchased on the web. Uses for stem injection treatments
  
- Andrew uses large droplet application for much of his work
  - Can use Precision Droplet Application (only need to hit 1% of leaves, (say) 5, for a modest size lantana bush). Need to hit a leaf on each main stem, and on tip of each stem, of the bush.
  - 10% WD plus synertrol for lantana in wet areas; 10% WD plus pulse for lantana in dry areas
  - Uses red envirodye or herbicide as spray dyes
  
- Treatment of weeds
  - For Jap Honeysuckle, use 10% Weedmaster Duo
  - For madeira vine, 0.7% Starane Advance or 10% Weedmaster Duo; scrape and paint large vines
  - For blackberry, slash/burn, then spray regrowth; use Grazon not Brush Off (using 10%, splat spraying)
  - Morning Glory – spray leaves along runners with 10% Weedmaster Duo
  - Privet
    - seedlings – foliar spray with Starane Advance (no effect on ferns and grasses)
    - small to knee high – snap and spray with 50% glyphosate
    - medium (2-3 m tall) – splat spray with 10% glyphosate
    - large - drill every 10cm of circumference, and use 3-5 ml of 100% glyphosate per hole
  - Wandering Jew – foliar spraying with Starane Advance or 2% glyphosate
  - Tobacco Bush
    - small – spray some leaves with 10% WD
    - medium – snap and spray with 10% WD
    - large – frill and inject with 10% WD