



# Landscape scale restoration across Nightcap National Park

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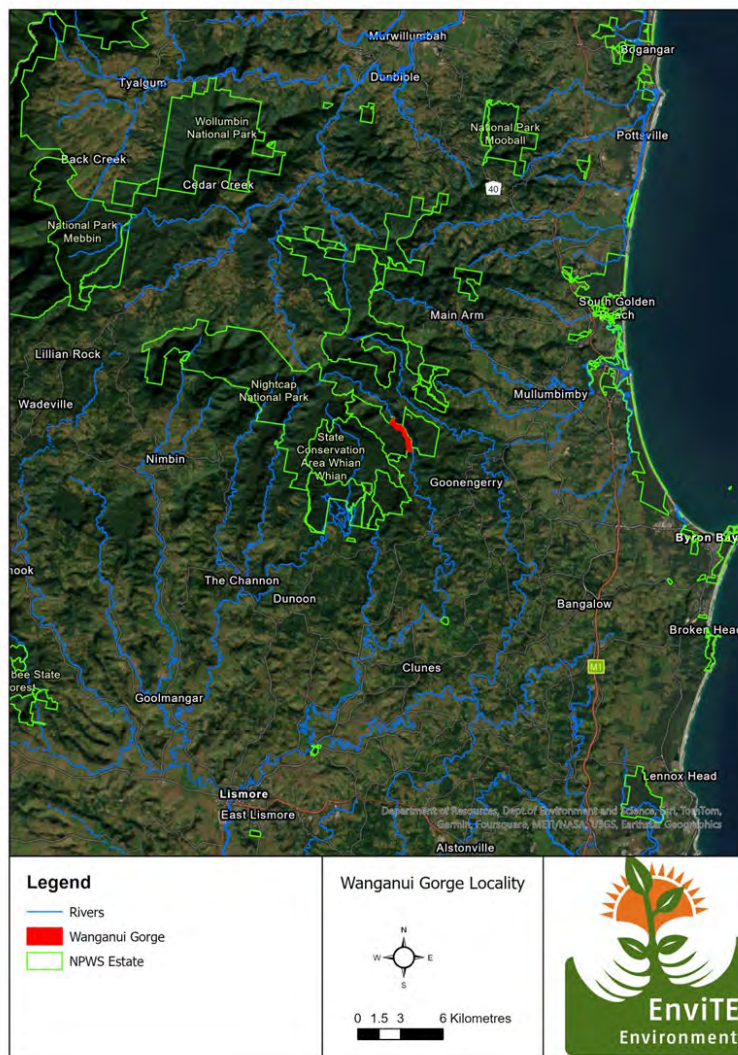
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Nightcap National Park is located within Nightcap Range in NE NSW

The Park covers over 8000 Hectares and is home to many Threatened Fauna and Flora species

17 different Threatened species have been located at Wanganui Gorge and 60 different threatened species are located within 5km of the site.

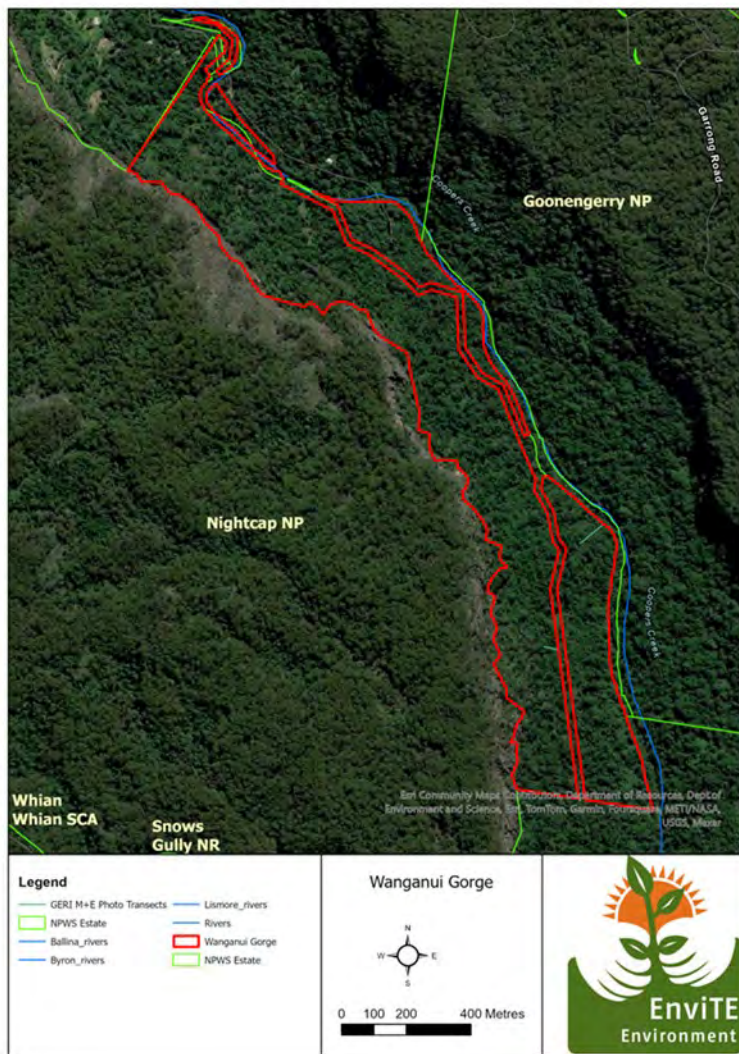
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Wanganui Gorge is located in the East of Nightcap NP adjoining Goonengerry NP. Coopers Creek runs through the gorge in a southerly direction.

Much of the 79 Ha site is occupied with intact remnant Lowland Subtropical Rainforest.

The site has historic impacts of disturbance from logging, banana growing and land slip / rock fall.

These disturbances have given rise to Lantana invasion. Over decades Lantana formed impenetrable thickets preventing regeneration of native rainforest.

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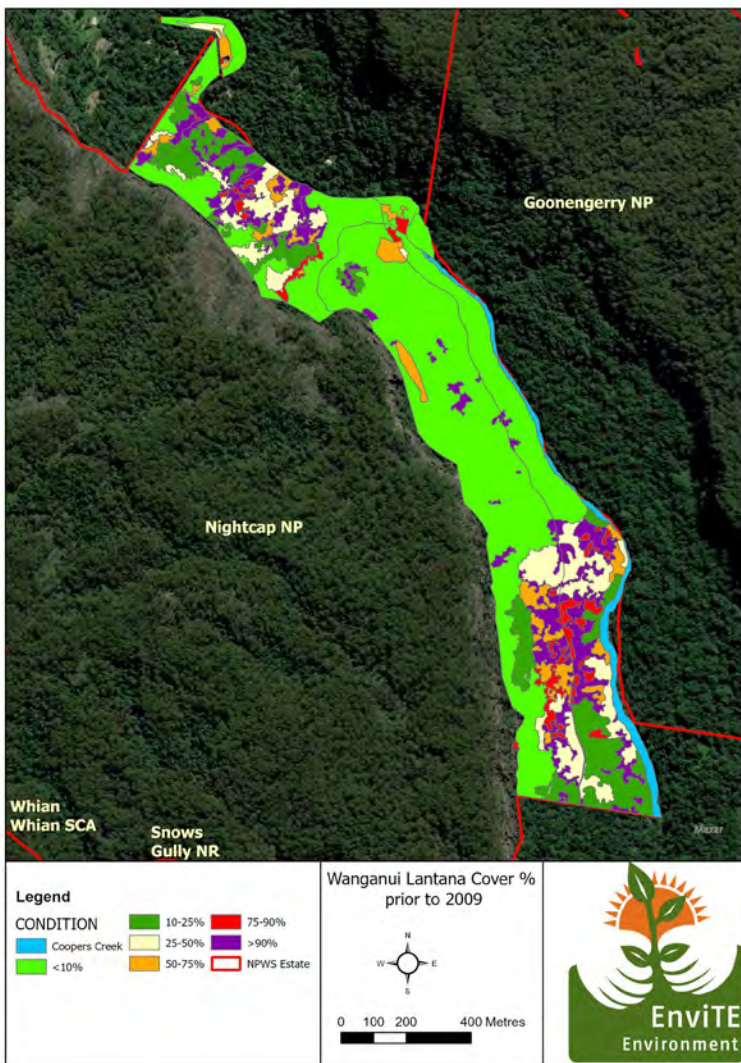




In 2007 a plan of management was developed for the South of Wanganui Gorge (Also known as Wompoo Gorge).

Funding was sort to implement bush regeneration activities to control the Lantana and facilitate natural regeneration of the Rainforest.

The plan was the first step in a significant rehabilitation undertaking that continues today.



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In 2009 work began in the South of the site.

Several different methods of Lantana control were employed.

We initially used a method developed by Ralph Woodford which had been successful at Rocky Creek Dam.



This involved using a 4wd tractor to slash 2 ha of accessible patches of lantana without impacts to existing native vegetation. The Lantana was then followed up with spot spraying, handpulling or Cut Scrape and paint.

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Further works expanded on the Tractor area through handwork, powerspraying and overspraying.

Lantana which was located up remnant trees or was growing close to native vegetation was cut scraped and painted or handpulled to avoid off target damage.

This would isolate larger areas of lantana for overspray.

Later these methods were adapted after analysing efficiency / output with trials of Splatter gun proving very successful.

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Nightcap is a very challenging area to work, often without vehicle access, hikes in excess of 1km to access work areas, very steep terrain and access to water limited and difficult.

The splatter technique reduced the volume of water required to treat large areas of Lantana, increased the area you could treat per pack and allowed treatment of Lantana further from where the operator was standing – reducing distances required to walk.

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Once primary work was completed sites were managed through spot spraying and hand work such as Cut, Scrape and Paint or hand pulling.

Where large gaps in funding occurred follow up would not be able to be undertaken with splatter technique due to the risk of off target damage. During these gaps in management it was not uncommon for Lantana to climb above the pioneer canopy / mid storey.

It should be noted that large scale Lantana control isn't necessarily the best option for all sites and sites with lower resilience should be undertaken more conservatively – with smaller areas targeted around existing remnant vegetation and supplemental revegetation.







The tractor method of control involved a lower volume of herbicide use in the initial stages in comparison to splattering. The tractor method also promoted rapid recolonization with native and exotic pioneers.

The method preferred for a project is very dependent on your level of funding and available resources to manage the extensive response to the disturbance.

The regeneration response may be dominated by native pioneers but there are always exotic species in the mix.

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By allowing natural breakdown of Lantana after control you have the ability to reduce maintenance input and slow the regeneration response to a more manageable pace. There is often a lag of 9 to 12 months after initial control before vegetation starts to regenerate on mass but this is very site and climate specific.

During the early stages of regeneration there is often pioneer species such as Poison Peach, Brown Kurrajong, Pencil Cedar, Bleeding Heart, Macaranga or Rubus that dominate.

These species appear so dominant that no other species can persist but this is not the case.

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Leaving the pioneers to dominate reduces the need to maintain the area as frequently compared to having open space for other species to persist. Over time the pioneers thin out, senesce and new species find a niche to occupy.



We have found during trials that thinning native pioneers takes resources away from managing exotics, increases the need to manage exotic vegetation and does not increase native regeneration diversity.

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## Invasive natives and emerging weeds

Native vines such as Slender Grape (*Cayratia clematidea*) or Water Vine (*Cissus antarctica*) commonly respond to Lantana removal and threaten to dominate any regenerating native trees. The Lantana Skeletons are a perfect climbing trellis and open availability of sun allows for rapid colonization.

Our method involved spot spraying wherever they threatened regenerating plants and this needed to occur frequently otherwise hand pulling was required to reduce off target risk.

Native Raspberry (*Rubus rosifolius*) was treated as a beneficial recruit and retained until canopy was established where it naturally senesced.

When work began in 2009 Giant Devil's fig did not exist on site. It is now a common exotic recruit of land slips or tree fall and is very high on the list when prioritizing works.

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16/09/2009  
Before work



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**21-01-2010**  
**After initial tractor**  
**slashing**



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22/11/2010  
Mass pioneer  
recruitment



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09/03/2012  
Pioneers  
dominating  
understorey /  
mid storey



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29/05/2024  
Pioneers  
absent



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Restoration work at Wanganui over the last 15 years has allowed for the fine tuning of techniques to maximise output and success of rehabilitation projects nearby.

These techniques were utilised in rehabilitating significant Lantana dominated areas at Rocky Creek Dam, Big Scrub Flora Reserve and Minyon Falls. All of these areas have now replaced 100% Lantana with a diverse range of Rainforest species with negligible levels of exotic impact.



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**Rocky Creek Dam – 04/02/2013 track cutting / splatter, 15/07/2013 after splatter (5 months), 27/11/14 during follow up (almost 2 years)**

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## Minyon Lantana work 24/10/2011 before and 26/07/2013 after

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# Challenges and knowledge gained

- Securing funding for a long period of time is very difficult and often dictates the works undertaken / priorities
- Splattering Lantana is a very efficient method of control in most scenarios, especially where access is challenging
- Pioneer species commonly regenerate in a monoculture that does not require management unless it conflicts with other biodiversity goals such threatened species habitat or revegetation is planned.
- Weed invasion is a never ending threat that needs long term plans and associated funding to manage and from observations in Nightcap in excess of 15 years.



**Australian Government**



**Big Scrub  
Rainforest  
Conservancy**

The Voice of the Rainforest

*This project has been assisted by the NSW Government through its Environmental Trust*

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