Control Methods of English Ivy in Puahanui Bush, NZ

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Documentation of invasions of English ivy (*Hedera helix)* into natural habitats in New Zealand have been limited, so far, to one small invasion into Paengaroa Scenic Reserve[1], and this rather large invasion into Puahanui Bush, Central Hawkes Bay.

English ivy had established in over half of the 130 ha covenant of Puahanui Bush by 2001. Control was started in 2000 / 2001 and soon found that there was little information about controlling ivy at such a large scale. The "reliable" knowledge was that ivy is hard to kill! And yes, ivy is hard to kill. However, we have experimented, made mistakes and learnt a lot along the way, and have discovered some techniques that control English ivy with good results.

Photo 1: applying glyphosate (with blue dye added) to the cut stems of English ivy.

Firstly – the seeding cycle must be stopped. Ivy changes to an aborescent adult form when it climbs - so mature fruiting vines must be cut from host trees. Cut a lower section of the climbing stem out. Do not pull the rest of the ivy off the tree as this can damage the host tree – generally the remaining upper stem will die off over the next few months. We have found that applying a strong glyphosate solution (25%) to the cut stem can aid in control – especially if the stem is still rooted into the ground.

We do not recommend Vigilant™ gel in this situation as the active ingredient (Picloram) may transfer to the host tree through the roots. We also found it was not particularly successful in controlling the stem.

Next step is to deal with the ground cover. Easier said than done!

Photo 2 – forest floor thick with ivy

Manual / physical removal is best if possible – so for small areas and especially where there are rare plants still surviving.

There are Ivy Removal Projects in Portland, Oregan[2], and British Columbia[3] that use teams of volunteers to hand pull English ivy in ecosystems where there are lots of precious low stature plants. They have also developed a technique called "life saver" where several metres around each large tree is cleared of ivy – saving the life of that tree for another few years.

For us the sheer size of the infestation made manual control un-realistic in terms of time and cost. It is definitely still our preferred follow up method, and for any small new patches that we find.

Please note – the sap of English ivy can cause itching and blistering on some people so gloves are a good idea if embarking on some ivy pulling.

So – we opted for chemical control, although ivy is well known to be hard to control chemically because of its waxy leaf and also the sheer amount of leaf. We have tried all sort of herbicides over the last 10 years. Tordon Brushkiller® with a spike of metsulfuron was tried at first (because someone, somewhere had used it successfully) but this combination in fact gave very poor results (60 -70% kill). This combination also resulted in some non- target damage to big kahikitea – which was due to unskilled application of the herbicide at the time and subsequent uptake of picloram.

It was really about then we started to scratch our heads and really wonder how else we could attack this invasive alien.

The landowners of Puahanui Bush had come across a technique, that we thought may be able to help while controlling ivy in a their homestead garden (from where the ivy had originally escaped from!).

They discovered that cutting the ivy with a weedeater before applying chemical gave a vastly improved result. We wondered how on earth we could emulate this bruising and defoliating of the plant on such a broad scale.

Enter, the sheep!

When we started this all the literature, that I had access to, said that nothing will eat ivy and that its not palatable to ungulates – but we have discovered that sheep love it – and in fact do very well on it.
I have since found a 2005 paper in the British Journal of Ecology that does mention that deer and sheep do eat ivy.

We started with a small trial area – grazed and then applied metsulfuron.
This was in pretty thick ivy and there was a pretty good result – around 90% kill in this first instance.

Photos 3 & 4 – thick ivy after being grazed – and one year after herbicide application

We have since refined the methods even more. Getting just the right amount of grazing is tricky: too much and the sheep tend to really devastate the lower tier of shrubs, saplings, seedlings and ferns too; too little and there will be patches of

ivy not touched. Of course putting sheep into thick bush is not that easy either – the sheep must be shorn, and we have used dry ewes that have some sense about them so they don't get stuck or strangled by supplejack vines.

We used internal fences to be able to put the sheep into a manageable area at a time, and progressively grazed and sprayed our way, over several years, through the last 40 hectares of the thickest infestation of ivy.

Photo 5 – Internal fences – note the ivy grazed on the RHS

We have found that metsulfuron applied at 5gms per 10 litres (with the addition of a surfactant ®Pulse) to these bruised and new shoots and stems results in a 95-99% kill.

Follow up is very important as there will still be some small bits alive and just waiting to take off. Luckily these small bits are quite slow growing so it does give a bit of time to cover areas and hand-pull these small bits out. We have found that winter is the best time to do this – when the ground is soft and the ivy is supple. Spot spraying is not a successful way to treat these small bits as there is too much root to leaf ration for herbicide uptake to be successful.

Seeds don't appear to be highly viable, which may differ from the northern hemisphere, nor does there seem to be a large seed bank. This is very helpful in achieving long term control.

Photo 6: handpulling gets results!

Long term regeneration after broad-scale application of metsulfuron to the forest floor looks to be pretty good, although it does take a few years to get going after the ivy is gone.

We monitored areas 5 years after initial control, and we a happy to report that there was no significant difference in numbers of trees or total numbers of seedlings present in the plots that were monitored.

Yes, there were some individuals lost (but there were also some individuals lost in non treatment areas). There was a decline in the total number of ferns present in those plots.

The really good news is that some of the species which were very limited or absent in the areas of dense ivy are now present as seedlings.

References

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