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HEIPIPI PA (HAWKE'S BAY): A PRACTICAL EXAMPLE OF WEED CONTROL ON AN ARCHAEOLOGICAL SITE

Hans Rook and Pam Bain
Department of Conservation, East Coast Hawke's Bay Conservancy.

Introduction

Heipipi Pa (Titi-o-Hawea) is traditionally one of the oldest pa in Hawke's Bay. It is contemporary with or earlier than Otatara Pa. Heipipi was built at least four hundred years ago and it is probable that many people lived on the site over a very long time and modified it according to their needs. The hapu associated with the pa include Ngati Whatumamoa, Ngati Awa, Ngati Maruiwi and Ngati Kahungunu (Pishief 1992).

It was originally a large and straggling pa, extending for about one kilometre up a spur. In 1990 with the encouragement of the NZAA filekeeper, Mary Jeal, the Department of Conservation purchased 24 hectares to form Heipipi Historic Reserve in order to protect part of this site which was under threat from surrounding development. This reserve contains the remains of pits, house sites, a defensive bank and midden all of which have been damaged and are not easily distinguished.

This is an unfortunate example of the loss of an archaeological landscape, of which Heipipi is a part. The coastal platform above the sea once contained a number of different kinds of archaeological sites, including pa (defended sites), open settlements, gardens and waka (canoe) landing sites, that were remnants of Maori occupation and use of the area. From the study of these sites a detailed picture would have been able to be built up of this past way of life. The development of this area has resulted in the destruction and loss of many sites and the preservation of a few sites, mainly kumara storage pits and the Heipipi Pa Historic Reserve. As a result, the physical evidence of the past in the environment is mostly gone. The remaining sites represent a bias towards a particular kind of site that has been selected for preservation. On their own the kumara pit sites do not tell us a great deal about the past in this area, while the

Figure 1. Location of Heipipi Historic Reserve

historic reserve now has very high values as it one of the few remaining pa in the area. (Greig 2003)

Ten years ago Heipipi Historic Reserve was covered in a range of weeds, some the height of a vehicle. The Department wanted to work towards removing them with the ultimate aim of getting the reserve in a position where it could be grazed by sheep. Work at Heipipi is still ongoing but enormous progress towards this goal has been made. During this work some very useful lessons have been learned regarding weed control on archaeological sites.

The primary management issue associated with this reserve was the need to protect the remaining archaeological features. Weeds do not necessarily cause damage to these features. However, the reserve bounds on to pine plantations and without active management it was clear that the resultant vegetation growth could have impacted on the archaeology.

The Department is also required to be a good neighbour and manage weed issues and the fire risk caused by having no stock on this land. This was particularly an issue as the reserve is close to an urban area. Due to the number of weeds stocking the reserve with anything other than cattle was not an option. An intensive weed control programme was initiated in order to eventually reduce the weeds enough to remove cattle from the site. Also, issues associated with spraying close to an urban horticultural area required close liaison with neighbours and landowners.

Reserve Maintenance

In order for the site to be stocked, around 3000 metres of new fencing was finally completed three years ago. This fencing is of a high standard, looks good and makes the site look as if people care about it.

An enormous amount of labour intensive weed control work has been undertaken in the last ten years. Good liaison is maintained with adjacent landowners who are supportive of the work being done.

Blackberry

This plant is now well under control on all north facing ridges and gullies running down to Esk Valley vineyards. Eastern Institute of Technology students have undertaken weed control for three days per year as part of their farming training.

Two methods have been used:

1 using the 300 litre slip on spray unit, and
2 knapsack spray system.

Both give students an excellent practical application of the knowledge taught in class. The objective with the blackberry weed control is to push it back to the manuka/kanuka scrub remnants and at least contain it here.

There are still some large areas of blackberry, however considerable progress has been made in the last two autumn spray periods. Tracks have already been cut and marked through these areas for autumn 2004 spray work.

Apple of Sodom

After 10 years of intensive work this plant is well under control. When work began on this weed the plants were as high as a truck and now few plants remain in the reserve. A great deal has been learnt in the process.

- The most effective way to deal with these bushes is to cut at ground level and swab 20/1 Tordon/Water mixture on to the freshly cut stumps.
- Heads of bushes should be stacked in burning sites where stock cannot trample through them.
- These heads should be burnt as soon as possible to destroy the seed source.
- Tordon Herbicide—trials were done to see if spraying bushes actually killed the seed contained within fruits on them. It certainly does not kill seed at any stage, from small green fruit, right through to when fruit burst happens and seed dispersal occurs.
- Prior to spraying plants under 1 m in height, all fruit is removed by holding the stalk in the jaws of straight jawed secateurs and twisting fruit off stems. This plant has very sharp, clear needles that are difficult to remove so wearing leather gloves is a very good idea.
- All fruit collected were put into an enclosed free standing fire place to ensure total destruction of all seed.
- A mixture of 20 ml Tordon brush killer, 20 ml of pulse penetrant to 10 litres of water is an excellent mixture for all seedlings, right up to plants under 1 m in height.
- Spray work is undertaken in the autumn in conjunction with main blackberry spraying operations undertaken with Eastern Institute of Technology students. Spraying for seedlings is also done during winter months when stock have grazed grass down and seedlings are easier to locate.

Figure 2. Heipipi Pa in 1994 covered in weeds.

Figure 3. Heipipi Pa in 2003.

Boxthorn

This plant has been worked on for three years and is also under control. Bigger plants have been felled with a chainsaw and dry leads are burnt during winter. Ongoing spray work on smaller plants and the regrowth on stumps is still required.

Hawthorn, Barberry and Cotoneaster

These plants are now confined to the point where they can be treated together with blackberry control operations in autumn. Hawthorn is still a considerable problem and requires heavy control.

Pines

These are removed as and when they are found. Two years ago a large number of trees were removed.

Rosehip

This plant has been a problem in the past but is well under control now. It is targeted during autumn when main spray work is undertaken.

Scotch Thistle

No work is done on this weed. Future work may involve a wick or boom system that can be attached to a 4x4 bike, so this plant can be treated over flatter areas of the reserve.

Other issues

Measures are in place to ensure seed sources from Heipipi are not transferred to other areas. For example, all vehicles are thoroughly washed after being used on the reserve.

Also, all stock coming onto Heipipi do not return to Otatara Pa Historic Reserve in order to ensure there is no transfer of Apple of Sodom seeds to Otatara Pa Historic Reserve.

Conclusion

The objective of controlling weeds in order to eventually remove cattle from Heipipi Historic Reserve has come a long way in the last 10 years. It shows how much can be achieved with perseverance and an intensive labour commitment. This project has also given a great deal of personal satisfaction and sense of accomplishment to the staff involved. Ongoing relationships with neighbours and other members of the community have been essential to the success of this project.

As this project has progressed, it has been sustained by strong community support and considered an investment in caring for the area. While the Department is still some years away from removing cattle completely from this site, due to the weed control this is now a possibility in the future. With a long term commitment to this weed control, and plans for future interpretation, the important archaeological remains of Heipipi Pa in the reserve will finally have better protection.

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References

Greig, K., 2003. NZ Archaeological Association submission to Hastings District Council (NRC 142).

Pishief, E., 1992. Heipipi Historic Reserve. Hawke's Bay Conservancy Historic Resource Inventory. Unpublished report to the Department of Conservation.

Rook, H., 2003. Heipipi Historic Reserve—work completed/required. Unpublished internal report to the Department of Conservation.