
PERSPECTIVE OF A CONSULTANT AND CONTRACTOR

Cam Speedy

Wildlife Management Associates, Turangi
ngakowhai@xtra.co.nz

Cam is a free-lance Wildlife Biologist with 30 years management experience in a wide range of both native and introduced wildlife, from roles in the New Zealand Forest Service, Department of Conservation and in both the corporate and private sectors. He is the director of Wildlife Management Associates, a business committed to working collaboratively with stakeholders to find practical, sustainable solutions to New Zealand's unique wildlife management issues. Cam developed and project managed the eradication operation for more than a dozen introduced mammalian species from the Maungatautari Reserve between 2004 and 2008. Perhaps his greatest passion is sika deer, which Cam has studied for 25 years.

ABSTRACT

Pest management can be a very polarising issue. Every pest management operation is different, reflecting variations in terrain, accessibility, ecology, the types of pests present and the nature and scale of previous pest management. Most importantly, stakeholders often seek different outcomes based on very diverse drivers and beliefs. There is no 'one-size-fits-all' approach to pest management. From experience with a wide variety of pest management operations within diverse communities, a pest management regime specifically developed for the Okataina Scenic Reserves is described. One that will contribute positively to water quality, the sustainability of forest ecology and to community engagement.

TRANSCRIPT

Kia ora no tatou nga mihi kia koutou katoa e tena hui. Thank you for that introduction. Having heard from Alastair Fairweather, DOC, and Dale Williams, the Bay of Plenty Regional Council, I have been asked to give you an independent perspective. I will give you my background so you can make up your own mind whether it is independent or not. I will talk about my perspective around stakeholder considerations and how the social science of pest control has a long way to go. We will look at some of the pest management considerations in this part of the world and the key local pest issues as I see them. I will conclude with a brief look at a pest control proposal that my colleague Nick Singers and I prepared for Nicky Douglas when she was here with DOC a couple of years ago.

I am Rotorua born and bred and went to Massey University where my academic training was in zoology and wildlife management. I did 20 years in the public service (NZFS/DOC) before it got too much for me and then I worked for Roger Lorigan at EPRO for a few years. He taught me a lot. Since then I have been working for myself and often work in the renewable energy industry for Genesis Energy, particularly around biosecurity, tuna which has become a new passion for me and whio (blue duck) which has always been a passion for me.

My first love is sika deer and probably always will be; I have been a student of sika deer for 30 years. But I do have a background in biodiversity, particularly forest ecology and more recently with the energy industry in fresh water ecology. I have had direct involvement in planning and managing more than 70 aerial operations all over New

Zealand. So I do know a little bit about what goes on out there. When I worked for Roger I managed 700,000 hectares of ground based pest control annually. We operationalised a deer repellent for 1080 baits which we tested over 3 different deer species and a whole lot of other critters like possums, rats and wallabies.

I project managed the eradication at Maungatautari and Wairakei sanctuaries and have done a lot of work with iwi and hapu groups in conservation and management planning. That level of pest management experience has given me a lot of interaction with various stakeholder groups and many and varied; conservationists, various iwi, hapu, whanau groups, hunters, researchers, farmers and land owners, anti-toxin lobby groups and then agency staff for a lot of different agencies (Councils, DOC, Ministry of Health, Food Safety Authority, Animal Welfare, etc.). There are a wide variety of perspectives, values and desired outcomes out there.

There is always a strong consensus on the need for pest control but very rarely is there a consensus on how we should do it, because there are a whole lot of different methods of control. They have all got advantages and disadvantages but there is no 'one size fits all' silver bullet. It simply does not happen like that. You cannot use a rat trap to catch a wallaby and you cannot use a Victor No. 1 to catch a wallaby. Bait stations are good for some species but wallabies do not like all bait stations. Night shooting is good on farmland but do it on Makatiti Dome and you will be struggling. **(Slide 1)**

Slide 1

Pest Management Considerations....

- There are many ways to control pests – all have advantages & disadvantages

- There is no silver bullet or **“one-size-fits-all”** approach...

That is a really important take home message, there is no silver bullet. It is about using a mix of tools to deliver the right outcome. The right method for a given operational area depends on a whole lot of things including what outcome is sought. Other considerations are the terrain and habitat, the size and scale, stakeholder and landowner requirements and the types of pest present as well as considering the past. What have these guys been exposed to previously in control operations?

It is the pests that are important here and there are plenty of them; wallabies, mustelids, possums, rats, cats, pigs, deer. **(Slide 2)** Which ones are the important ones?

Slide 2



That really depends on what is to be achieved. In my view the key management requirements we must have for a place like Okataina are the protection of those local iconic tree species like the pohutukawa, rata; mature forests as seed sources for wider recovery. **(Slide 3)**



Slide 3

It is also important to maintain the ecosystem services provided by the remaining keystone bird species like the bellbirds, tuis and kereru, those pollinators and seed dispersers. Without them the recovery of the Tarawera forests, impacted by fire and logging, will not occur. Forest succession following the Tarawera eruption means that the forests are young, they are even aged, and they are still developing. It is also obvious that the healing of all those slips that Willy Shaw showed us is critical to reduce sediment and phosphorus run-off. These are key management requirements in designing a pest management regime for a place like Okataina.

In my view these are the three key critters that we must look out for. **(Slide 5)** Possums are not only chewing at the totara, rata and the kamahi, they are also taking off the flowers and the seed sources for future recovery. If there are no berries for kereru to disperse then that seed dispersal ecosystem service has no foundation. Ship rats are devastating predators on those keystone bird species reducing their numbers, their productive output

of offspring. Every little seedling that eventuates from a seed or fruit pooped out by a kereru will not turn into a tree while there are dozens and dozens of wallabies nipping them all off. In my view these are three critters that we have got to address. Unfortunately wallabies, because of their subordinate behaviours, come third on the list when you put a device out there. They will not turn up until the rats and the possums are dealt to, so that creates operational headaches as Dale has already described.

Slide 5



Possums do a lot of habitat damage; they take a lot of forest resource like flowers and fruit as well as destroying the canopy. They are a predator on insects, bird's eggs, nestlings, reducing those ecosystem services. They are a competitor for our native wildlife taking food resources that other species would otherwise have.

Ship rats cause habitat damage by the destruction of fruit and seeds. They are a predator of insects, bird's eggs, nestlings and again the reduction in the ecosystem service and a competitor for native wildlife.

Wallabies cause habitat damage; they browse seedlings and destruct the understory of the forest. Most of the Okataina Reserve is below a metre high as many of you would have seen on the field trip on Wednesday. There are not even filmy ferns, it is just hollowed out. There is a lack of regeneration particularly around the slip scars from climatic events, but also the natural forest succession processes recovering from the Tarawera eruption.

What are the pest attributes? Possums are widespread at moderate density. There has not been a lot of pest control in that area since 1999 and 15 years is a long time in pest control. They will be an environmental equilibrium in balance with whatever resources the forest contains. They are vulnerable to most pest control methods. One of the things that makes possums so successful is their investigative behaviour, a willingness to try stuff out, and it is also their Achilles heel which makes them relatively easy to control. Populations take 5 years to recover after control.

Ship rats are very wide spread but fluctuate in density from one year to the next. When we have a mast¹ year of forest seeding and fruiting, rodent abundance booms. They can occur in very high densities when we have a big rimu or podocarp fruiting. They are vulnerable to most of the toxins we use and have preponderance for any toxins given them. They can be trapped but it needs a large fleet of traps during a mast year to make a difference. You need regular intensive control for rodents because they breed very prolifically, the average litter size is 6 or 7 and they can be breeding themselves at just 3 months of age, so they proliferate very quickly and come back very quickly.

Wallabies are currently at an environmental equilibrium with the forests out there. They have not been controlled for 15 years and they are spreading. My mum lives up in Tarawera and I am always getting hassled about the possums eating her roses. But when she tells me she has a funny looking wallaby kangaroo on her front lawn eating her grass, and she has never told me about it before, it tells me that things are changing. They have got limited vulnerability to many of our pest control techniques and that is an operational headache, but also it is subordinate behaviour. If you want to remove wallabies where there are possums and ship rats at any sort of a density you are up against it.

It has been many years since there has been any effective control. That previous control was small scale and localised with no repeat work done. There are large areas of adjoining habitat which remain untreated and will remain untreated, such as vast areas of forestry plantation to the east. Ongoing reinvasion from both sources is inevitable. It is not about eradicating; this is about starting on a journey that does not finish. If you are going to bite the bullet and undertake expenditure on pest control in the Okataina Reserve it will require sticking at it forever otherwise all the benefits unravel and it will be back to square one if it is stopped. I cannot emphasise that point enough, there must be sustained control for any sort of benefit; a long term commitment for decades to come to see outcomes achieved.

But there are some opportunities here. There are a lot of positive community initiatives and motivation in the Tarawera community with their pest control work and at Rotoiti. There are good physical boundaries. Dale showed you the effects that Lake Rotorua, the Kaituna River and the Tarawera River have for wallabies. They create nice geographical features to limit reinvasion if we get the geographic scale of our pest control right. The unknowns of course are things like pigs and deer. There are not large numbers of deer in this landscape but they do browse. Some will argue they are an analogue species for moas and that our forests without any browsers are not natural anyway, so who knows. But for me the three that we need to look after are possums, wallabies and ship rats.

The potential pest regime that Nick and I have considered is a combination of localised intensive control, targeting ship rats and possums to enhance key bird species sites supported by landscape scale pest control. Most of the localised control can be done at ground level and be community led involving stakeholders. If it is targeted on the high value mature forests which provide seed sources for keystone bird species that have those ecosystems services for dispersal then there is the opportunity to support the larger landscape. The big stuff, the 5,000, 10,000 hectare areas, by its very nature will have to be agency led which will need some sort of secure funding. The logistics of managing

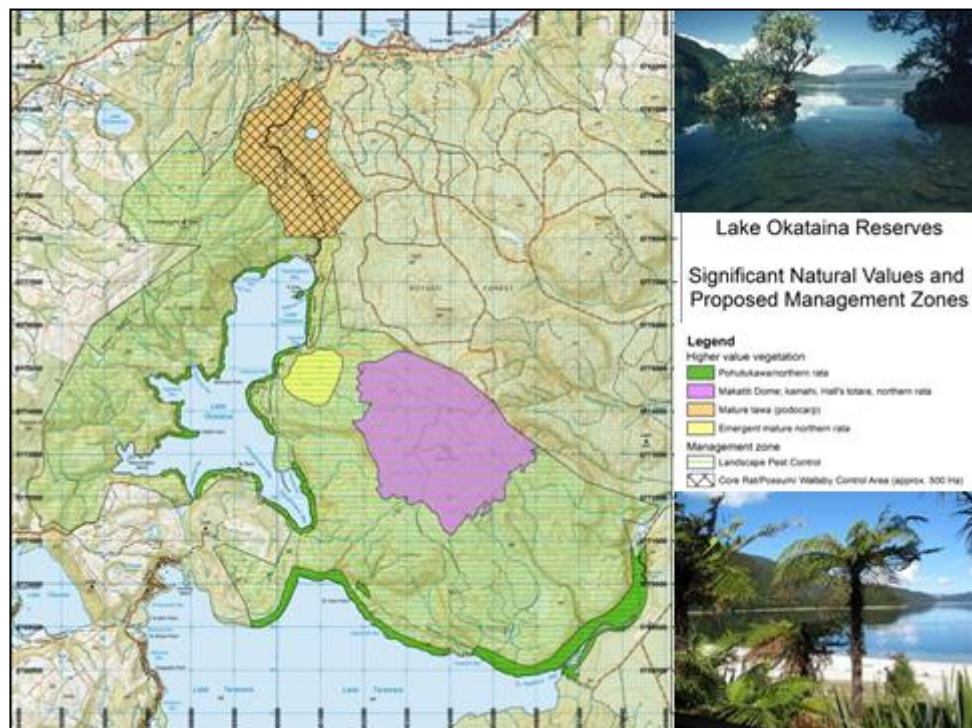
¹ mast year (noun) a phenomenon when the fruit (mast) produced by trees in a given year is exponentially higher than the average; by extension, a year in which vegetation produces a significant abundance of fruit. dictionary.reference.com/browse

possums and wallabies on large landscape scale, whether by aerial or ground means, requires a level of complexity that cannot be handled by community groups.

A pest management regime would require regular landscape scale pest control at 3 - 5 year cycles over a large area, supported by more intensive community led pest control in smaller localised areas of high quality habitat. For effective forest recovery control it would require 4 to 6 cycles, a 20 year time horizon, to get any outcomes. Are funding agencies and communities ready to take on that sort of an endeavour? It is a serious endeavour which, if you want to deal with, you need to go into it with your eyes open.

Slide 6 is a map of how a regime like this might be structured. Our thinking was that there is some very high quality tawa/podocarp forest which is relatively accessible (brown cross hatched) where there is an outdoor education camp. This is a sitter for some sort of community led ground based regime that is ongoing.

Slide 6



Here ship rats would always be suppressed, as would possums, so that birds like kereru and tui and bellbird could thrive in that environment, from where they can take the seed sources from those mature forests and spread them into the surrounding recovering landscape. There are some very important resources in places like Makatiti Dome (purple) and some of the pohutukawa (dark green) rata (yellow) forests, but as already discussed most of this is developing second growth forests (bright green) which have been impacted by the Tarawera eruption, fire and logging. We want to see a wider recovery of this area. An effective landscape scale pest control area might well be much wider and even have to involve the production forestry to the east where there is a sea of pests. If you want to create an island of very low pest density (and pest impact) it is vital to manage this sea of pests which will be a source of reinvasion forever.

We have good physical pest boundaries like the Tarawera River and lake shores and a very active community group at Tarawera who are doing great things with community led pest control bringing back birds to their settlement. This provides an opportunity for birds

to help repopulate the wider area with vast numbers of seeds. However, if you do not remove the wallabies out of this wider area those seeds will be nipped off as cotyledons² and none of them will turn into understory that will support the healing of those slip scars, the healing of that lake shore erosion and the recovery of the Tarawera eruption forests back to tall forest.

In summary, there is no 'one size that fits all' approach in pest management. It is about selecting the right tools for the right place, for the right reasons based on the sorts of outcomes that you are after. If you do not do that it is wasting your time even starting.

The most appropriate methods depend on the outcomes sought and the attributes of each operational area, stakeholder requirements and pests present, and again I cannot over emphasise that enough. For Okataina it is a combination of methods over a sustained period of time, localised community led pest control projects supported by landscape scale projects. We have a really good one at Turangi where Project Tongariro manages pests on Lake Rotopunamu over a 500 or 600 hectare scale. It is a magnificent place to go and see what New Zealand forests used to look like in terms of birds, but they would not be as successful if they were not supported by TB Free New Zealand landscape scale Tb vector control in the 20,000 hectares of forest all around it. It is the sort of example that Nick and I think has application here at Okataina, based around our experience at Mount Pihanga and Tongariro National Park.

The cool thing about that approach is that it provides an opportunity for stakeholder engagement and an active community like you have here. To me it is a bit of a no brainer and critical for sustainable outcomes.

² A **cotyledon** is a significant part of the embryo within the seed of a plant. Upon germination, the **cotyledon** may become the embryonic first leaves of a seedling.
<http://en.wikipedia.org/wiki/Cotyledon>