

**The Sanderson Memorial Address to the
Annual General Meeting of the NZ Royal Forest and Bird
Protection Society
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“1080 or not 1080 – Is that the question?”

By Wren Green

It is a great honour to be invited to give this address to you this evening.

Val Sanderson is one of the outstanding figures in the history of New Zealand conservation - as I know this audience appreciates. As one of the founders of the Native Bird Protection Society, later to become the Forest and Bird Protection Society, Val Sanderson was a “driving force” that built the Society into “a conservation organisation to be reckoned with”.¹

In 1922, Sanderson was exposing the lack of action by Internal Affairs to improve and protect Kapiti Island – which had achieved its status as a sanctuary back in 1897. I am sure he would be delighted to see the state of Kapiti today as one of our foremost island sanctuaries for endangered species.

Captain Val Sanderson was also speaking out against the impacts of possums a *decade* before government finally saw the light during the 1940s and switched to a policy of reducing possum numbers rather than boosting them.

In 1935, he wrote to the Under Secretary Internal Affairs saying “*These are mainly plant-eating animals, but really omnivorous mammals.*”² Almost 60 years later, the full impact of this observation became starkly clear when, for the first time, video cameras captured images of possums eating eggs and chicks from kokako nests.

So, in turning to the topic of my address tonight I cannot help but wonder where Captain Sanderson would have stood on the use of 1080, especially on the aerial use of 1080. Perhaps I will speculate on that towards the end.

“1080 or not 1080?” Currently the arguments for and against 1080 are prominent in the public agenda.³ But in terms of our long term conservation needs – is that really the question?

¹ Our Islands, Our Selves. A History of Conservation in New Zealand. 2004. David Young. University of Otago Press.

² Ibid, p.134.

³ Compound 1080 is the toxin sodium fluoroacetate.

I want to consider this question after first offering a brief historical survey.

Public unease over the most appropriate methods for pest control has been with us for decades.

The Parliamentary Commissioner for the Environment (PCE) released a major report on possum management in 1994. This was sparked by public objections to 1080.⁴ The report supported its continued use – making a number of technical, research and procedural recommendations. Social aspects did not feature strongly in the recommendations beyond the need to improve educational information on 1080.

Importantly, however, it concluded that: “*Aerial application of poisons, no matter how well targeted, is widely perceived as ‘indiscriminate’ and public opposition is not likely to go away.*”⁵

In 1996, a report for MAF Policy gave us a further insight into public perceptions regarding possum management – and the issues that refused to ‘go away’. Most New Zealanders saw possums as pests, and put greater priority on their use for protecting natural heritage than for Tb reduction.

However, while they recognised that control was necessary, people varied widely in their acceptance of different ‘control’ methods. Shooting was the most preferred; poisoning, especially aerial 1080, the least.

Females, more than males, objected to poisoning as a method and emphasised safety and acceptability. Males emphasised affordability and effectiveness. Aerial 1080 operations were seen as riskier for people than biological controls. I think a survey done today would give similar results.

The dilemma was how to achieve the *desired good of controlling possums without doing unintended harm.*⁶

The authors of the MAF study said there was a need for a better understanding of possum impacts and control options. In general, people were better able to identify risks and issues attached to the control methods than the risks (to the environment) if control was insufficient. In other words, risks to humans were, quite naturally, easier to articulate than the consequences for native species if possum control was ineffective.

⁴ Possum management in New Zealand. 2004. Parliamentary Commissioner for the Environment, Wellington.

⁵ Ibid P. 126.

⁶ Public perceptions and issues in the present and future management of possums. March 1996. G. Fitzgerald, I. Saunders, R. Wilkinson. MAF Policy Technical Paper 96/4.

Lots of issues swirl around possum control technologies. There are ethical issues, conflicts in values over possums as living beings or possums as pests, and different views on the impacts of possums, the flow-on effects, and uncertainties over different methods.

The authors of this 1996 report concluded that: *“The future challenge for policy-makers is to approach each of these issues in its own terms, rather than attempt to cover all in a single and potentially inappropriate strategy.”*⁷ How would we score our collective performance on that basis in the years since – I wonder?

There was another PCE investigation into possum management in 2000.⁸ This time the focus was not on 1080, but on what New Zealanders thought about potential biocontrols for possums, including genetic engineering.

New questions were raised around uncertainties and unpredictable effects. I do not intend to discuss biocontrol issues or options tonight, but many of the issues raised in that report are also relevant to the 1080 issue.

In 2000, the PCE’s recommendations focused heavily on the need for social science research into how the public viewed the way possums are managed – as well as better educational and communication programmes. The study had revealed a *“...limited understanding of the necessity, magnitude, costs and complexities of controlling possums.”*

It concluded that: *“unless there is ongoing recognition of, and consensus on, New Zealand’s possum risks there will not, and cannot, be an informed debate about future control options.”*⁹

So we can see a pattern emerging here – and I suggest, we are still caught in the headlights of this issue today.

There is public support for possum control, particularly to protect biodiversity values. Yet this support is strongly influenced by what control methods are used. Poisons are the least preferred, for reasons I will come to later.

It is troubling to note that people’s strong views on control options were not matched by their understanding of what happens to plants and animals if control is ineffective. From your perspective, and knowing what you know about the parlous state of many native birds, reptiles, invertebrates and plants this is a major concern.

⁷ Ibid, p 27.

⁸ Caught in the headlights: New Zealanders’ reflections on possums, control options and genetic engineering. 2000. Parliamentary Commissioner for the Environment, Wellington.

⁹ Ibid, p.90.

Let us fast forward past the various scientific conferences that have looked at the technical and ecological aspects of 1080, to the recent decision by the Animal Health Board (AHB) and the Department of Conservation (DOC) to apply to the Environmental Risk Management Authority (ERMA) to have 1080 reassessed – under the Hazardous Substances and New Organisms (or HSNO) Act 1996.¹⁰

This was always going to be an expensive and publicly contentious process.

But, given the widespread public interest in 1080, the two agencies were convinced that it was worth going ahead on the following grounds under the HSNO Act.

One, significant new information was now available about the effects of 1080. And, two, there was an intention to significantly increase the amount of 1080 used in the future, primarily by AHB as part of its strategy to eliminate bovine Tb.

So, we come to the ERMA hearings on the 1080 reassessment, held over two long weeks in May of this year. It was an exhaustive, as well as an exhausting process.

The ERMA Committee heard over 150 submitters – from among the 1406 that made submissions. It traveled to six different venues around the country, as well as holding hearings on a marae. It was the largest and longest hearing ever held by ERMA.

My role was to act as ‘advisor’ to the two applicants and be ready to help answer technical questions from the Committee – of which there were many!

So what happened at the hearings? My main observations were around the different groups of people who took part – their interests and the intensity of their evidence.

I will leave aside the farming-related submitters who were overwhelmingly in favour of 1080 use. They quoted the dramatic falls in reactor rates in cattle and deer herds in recent years in all TB-infected regions after successful possum control operations. Many farmers also spoke of significant increases in bird life after aerial 1080 operations.

The other submitters fell roughly into four groups. To simplify – the arguments usually went along the following lines.

Group A: ‘I care deeply about our native birds and animals which is why I fully support the use of 1080 as the most effective method we have to control possums and other key pests such as rats and stoats.’

¹⁰ 1080 was first assessed and registered for use in New Zealand in 1964.

Group B: 'I care deeply about our native birds and animals which is why I strongly oppose use of 1080, especially aerial use of 1080, because it kills native birds and insects and is damaging our forests.'

Groups C: 'I care deeply about our native birds and animals which is why I strongly oppose use of 1080, especially aerial use because it kills native birds and stuffs up my hunting.'

Group D: 'I care deeply about our native birds and animals but they dropped 1080 in our water supply without telling us and it was all over the roads and tracks. Besides, it's like DDT and that turned out to be bad.'

I'd like to quote from the statement that one submitter read out at the hearings in Hamilton:

"If I was a regular bush goer in New Zealand I would be very worried after reading the horror stories of things that are happening. Our forests are a great asset to our country and we need them, we need insects, we need plants, we don't need our ecosystem poisoned by some cheap and nasty poisoning programme. ... You don't have to be a scientist, just have common sense to see what pesticides, insecticides, and all the other chemical rubbish is doing to nature, and peoples and animals health in general."

This comment exemplifies the key concerns raised by people opposed to 1080 – especially aerial 1080 operations.

When I think about all the submissions that were made, I believe that the anti-1080 responses can be grouped under the following headings.

Mistakes. Past operations have dropped baits in the wrong place, not notified residents in advance, contaminated water supplies, or threatened people's health. And some people referred to poor consultation.

Misinformation. Some people presented incorrect information about the effects of 1080, how it works in the environment, breakdown rates and consequences of its use. Relying on internet sources, often from overseas, and often completely wrong – they use this information to justify their views.

Mistrust and threats. Many who spoke extrapolated from other situations where once 'safe' chemicals had turned out to be harmful, such as DDT, or the Auckland aerial spraying campaigns. Others felt threatened by what they saw as the risks of exposure through water or other contact with baits. Scientists were mistrusted by some; as were the applicants, AHB and DOC.

It's easy in a situation like this – when so much is riding on the outcome – for people to fall into pro and anti positions, to be very passionate about their concerns and in their use of information.

This is not to say however, that we should write off the public response as simply irrational – or fall into the emotional construction of the debate as is so often presented in the news media.

I would like to step back a level now and comment on how these reactions against 1080 can be regarded in the wider context of risk. And in particular, how people perceive various forms of environmental risk.

When we do that, it turns out that aerial use of 1080 has all the factors that psychologists have identified as likely to raise the level of public 'outrage' - and increase their level of risk aversion.

These risk perception factors are as follows.

First, is the risk voluntary or coerced?

When people sense that a technological solution is being imposed on them involuntarily, risk aversion tends to go up. In the case of 1080, people feel they have no choice over where aerial operations take place or where the baits land. This may help us understand the frequent comment about "indiscriminate" use.

Next, is the risk natural or industrial?

People tend to accept natural hazards more readily than those man-made situations where somebody could have made a different decision. 1080 is manufactured in the USA and comes with heavy warnings about its toxicity. By comparison, bio-controls and even traps may seem less 'industrial'.

Familiar vs non-familiar

If you've seen it before, you're less likely to be risk averse. A 1080 aerial drop at 5-yearly intervals is certainly non-familiar. Regular trapping or ground-baiting is familiar and people are likely to be more comfortable with it.

Memorable vs non-memorable

Images from our personal and social history are significant. We grow up with images of aerial topdressing planes spraying the countryside with fertilizer. I think some people perceive 1080 drops in a similar way, which is quite false.

Dreaded vs non-dreaded

Poisons are definitely perceived as 'dread' substances. People have been described as 'intuitive toxicologists' for good reason. Humans have always relied on their senses of sight, taste and smell to detect harmful food or water – it helped our ancestors to survive. So we have a built-in 'precautionary approach'

to poisons. Evidence of potential harm is more likely to be believed than evidence to the contrary.

Known vs unknown effects

Many people still have a poor understanding of the effects of 1080 and are therefore uncertain and less likely to be tolerant of its use. This may be less so now than previously, given the amount of information available on 1080, but it is still a factor.

Individually controlled vs controlled by others

Where is the sense of personal choice over aerial 1080 operations? Personal control over a risky technology (such as use of cyanide or talon) is more likely to be acceptable than if someone else has control – such as an unknowable helicopter pilot. (Can I trust a pilot I don't know to keep baits out of my water supply?)

Morally relevant vs morally irrelevant

The perception that 1080 is an inhumane poison was often raised by objectors. Talking about 'trade offs and mitigation' becomes less useful if an activity is perceived to have an inherent moral dimension. In my view, this is a factor for *any* control method we use to kill animals; for example, the use of traps with their much higher risks for weka and kiwi raises its own set of moral issues.

Trustworthy sources vs untrustworthy sources

Scientists generally are less trusted now than they used to be, especially those employed or contracted by agencies promoting the use of the 'dread' object. (Think DDT, Agent Orange, genetic engineering, or mad cow disease.)

Some of the 1080 opponents attacked the research of DOC and Landcare scientists regarding the benefits of 1080 operations for both bird species and forest recovery. I know those scientists personally as very competent people who are also deeply committed to the wellbeing of our biodiversity. There were moments during the hearings for me when saying nothing was quite an effort!

DOC itself has researched community consultation processes for aerial 1080 applications.¹¹ The authors reported that many people mistrusted New Zealand science and scientists. There was high level of trust, however, in what neighbours and other members of the community had to say.

In summary, these perceptions and concerns over risks associated with the aerial use of 1080 can be summed up as – *a loss of personal and social control*.

We are not simply dealing with a technical argument that can be won on the strength of science alone and the reduction of risk through improved operational

¹¹ Community consultation processes for aerial 1080 applications. 2004. C. Wilson and J. Cannon. Science for Conservation 247. Department of Conservation, Wellington.

procedures. Rather, it is an issue of perception and social engagement, and the methods we can employ for managing political processes, as well as managing possums and poisons.

Wearing my scientist's hat, I can see that the issue of possum control – and indeed the whole agenda around NZ biodiversity protection – will not be resolved just through technical formulae. We are drawn into the more challenging social agendas which are at the heart of conservation management in the 21st century.

So how do we proceed?

The scientific evidence in favour of using 1080 and our experience of 'best practice' on how to minimise the operational risks are significantly better now than they were a decade ago. Application rates of baits have been cut 10-fold over the past 30 years to about 3 kg/ha. The use of global positioning systems by pilots has dramatically increased both the accuracy of drops and the effectiveness of control operations. Many of the uncertainties around the fate of 1080 in water (it has a half-life of only 5-8 hours), or its effectiveness against possums, rats and stoats (through targeted by-kill), have been answered.

Well planned 1080 operations are making a huge difference to the survival and breeding success of threatened bird species, including kokako, kereru, and kiwi amongst others.

For example, last month the results came through from the latest monitoring of kiwi survival in Tongariro Forest after an aerial 1080 operation for pest control. I think they could be called 'spectacular'. Numbers of possums, stoats and rats were all very significantly reduced – from the use of a single toxin. As a result, kiwi survival to fledgling is at least 60%. In non-1080 areas it is only 8% or lower. Without active management of predators wild kiwi populations are continuing to decline all over New Zealand – as are other threatened bird species.

So my view is that the 1080 issue is no longer a scientific issue. Instead it is very much a social and political issue. It will be counter-productive just to stress the science and improvements in reducing operational risks. We need to deal with the underlying risk aversion that generates the public unease, the 'anti' headlines, and the efforts to derail 1080 use – sometimes by tactics that are themselves unethical.

Having been inside the 1080 hearings and listened to the strong 'for and against' arguments – what is the best way forward?

The ERMA hearings were about the benefits and risks of 1080. The emphasis was on the science and technical aspects of its use. But the underlying risk aversion issues and how they can be engaged do not tend to be seen as within ERMA's mandate to resolve. In fact, they most definitely were NOT resolved.

The information presented at the hearings clearly did not prevent hundreds of people from marching down the main street of Coromandel protesting a planned 1080 operation, just two weeks after the hearings finished.

The hearings did not achieve reconciliation between adversarial positions, nor was it realistic to expect that they would. Semi-judicial hearings are more likely to entrench positions, not create a dialogue for compromise, or break down barriers between opposing camps. That takes much more time than two weeks.

So what happens next? The ERMA Committee has retired from public view to consider its decision on whether or not 1080 should continue to be used and, if so, whether additional controls are required. I won't speculate, on or off the record, as to the outcome.

But I will suggest that there is every likelihood – just as those earlier reports found in the 1990s – that the great 1080 debate will still refuse to go away.

And further, that our inability to come to grips with this debate raises a challenge about our capacity generally to make the social and political progress we need to make to protect New Zealand's biodiversity, to complement our undoubted technical and scientific progress.

So what ought to be happening?

If the need is to address the underlying risk aversion issues, how might we proceed?

One factor, but not the only factor, is providing clear, understandable information. There is a lot of that already available. For example, the 2-page comic strip in the latest Forest and Bird magazine ("1080: a birdbrain's guide") is clear and accurate as well as understandable. In it a kiwi in the forest convinces a weka in the forest of the benefits of 1080 over the risks.

But I suggest that our audience needs to be the average 'kiwis in suburbia' - people who, unlike Forest and Bird members, are not personally familiar with the remarkable birdlife in our forests and who have not seen *at first hand* the benefits of 1080 operations.

And therein lies the key to the way forward. In the face of dread, perceived coercion, mistrust, and uncertainty about outcomes, people need to have an involvement at a level where they can *see for themselves* why we use 1080 and what its use achieves.

What does this mean in practice for agencies like DOC and regional councils wanting to use 1080 for pest control? I'd suggest the following steps.

1. Engage with interests, particularly anti-1080 interests, early in the planning of pest control programmes.
2. Start the community or iwi consultation phase not with a proposal about boundaries for 1080 drops but with a broader dialogue about the local needs for conservation management. The 'experts' inside the organisation may know this already, but until the community does as well there is a strong likelihood of talking past each other.
3. Explore with the iwi and communities involved what is locally appropriate, what local employment might be realistically generated as part of the management operations.
4. Be willing to amend proposed operations to meet local needs to reduce risks.
5. Design the process so that all interested parties have the opportunity to be involved in monitoring.
6. Provide post-operation assessments and analysis reports to all interested parties.
7. In some cases, consultation outcomes might lead to aerial 1080 not being used at all.

This approach is more likely to succeed because:

- People will feel involved and be involved; control will not reside 'outside'.
- Involvement with programme design and monitoring will mean they will see for themselves what happens in operations and the outcomes for bird populations, etc.
- People will develop a much better understanding of the real effects and benefits of 1080 rather than believing local 'experts' and horror stories.
- Trust will be built up and antagonistic communities will become supporters for the next time possum or other pest management is needed.

Am I being too idealistic?

Not really. There are already a number of very good examples from DOC and regional councils where all these approaches have been implemented with very positive results. I'll give you just two of them.

The submission from the Lake Taupo and Lake Rotoaira Trusts described how formal consultation protocols were developed in those communities that incorporated the points I have listed. As a result, the process had "educated both sides of the debate about the real impacts of 1080" and aerial operations take place to everyone's satisfaction.

Far to the south on Stewart Island, DOC faced a very antagonistic local community when it first raised proposals for possum control in Rakiura National Park. People had assumed DOC wanted to use aerial 1080 and previous aerial 1080 operations in Southland had aroused lots of opposition. A community liaison group was formed and a couple of years later, after lots of discussion and dialogue, ground control of possums started. A May 2007 press release from DOC announced that ground control with 1080 has been very successful over a block of some 9,400 ha. Rotating control through blocks is now keep possum numbers low over 31,700 ha of Rakiura National Park.

Why am I putting so much emphasis on resolving the issue of public mistrust of 1080 that has now been with us for decades? That takes me back to the title of this address – 1080 or not 1080 Is that the question? Well, I believe that is *not* the question.

The real question is: *are those people opposed to 1080 aware of the real crisis – the widespread, ongoing loss of so much of New Zealand's indigenous biodiversity? And if not, how can they be engaged to support this urgent task?*

Let me elaborate.

There are two 'realities' about the state of our biodiversity.

The first 'reality' can be understood from the findings of the report "Public perceptions of New Zealand Environment 2006" from Lincoln University.¹² Random samples of New Zealanders have been taken every two years since 2000 regarding their attitudes to various environmental topics. The 2006 results showed that most people think management of native forests, plants and animals is significantly better than it was six years ago.

A majority also thinks that the condition of native forests is significantly improving; that there has been no change in the wellbeing of native plants and animals.

¹² Public perceptions of New Zealand Environment 2006. K.D. Hughey, G.N. Kerr, R.Cullen 2006. Lincoln University, Canterbury.

In contrast, another 'reality' is the independent review of progress during the first five years of the NZ Biodiversity Strategy.¹³

That review concluded that we lost an area of native ecosystems equivalent to the size of Abel Tasman National Park during that five years; that many species are worse off than in 2000; and that 55% of DOC-managed land that would benefit from management gets none at all.

DOC's list of threatened species which was updated in January 2007 had 416 extra species on it. Forty native bird species are considered by DOC to have considerably worsened in status, while four have improved.

There is a serious gap between the 'all is well' reality that many people hold and what the evidence from the forests and lowlands is telling us. The Lincoln authors suggested that:

*"... the enormous amount of apparently 'good' news about endangered species management projects (e.g., every extra kakapo is treated with acclaim by the media) is masking the true gravity of the biodiversity crisis in New Zealand."*¹⁴

Therein lies the challenge I would like to leave you all with tonight.

All of us with the knowledge, passion and commitment to improve the state of our biodiversity, to 'turn the tide' and help restore the dawn chorus, have an urgent job to do.

If ERMA approves the continued use of 1080 the scale of operations, mostly by AHB, will increase. This raises the prospect of more protests over its use from people who we actually need to be supporting more biodiversity protection, not arguing for the ban of one of our most effective tools.

Real engagement and dialogue over their concerns about 1080 and our concerns about the declines in biodiversity are what we need to promote and get involved in. The opportunities are there and initiatives need to be created – starting in Coromandel.

In conclusion, I might take this opportunity to speculate now on what Captain Sanderson's response would be to the situation we find ourselves today.

I suggest he would weigh up the current issues and decide, on balance, that 1080 is an essential tool for possum and pest control, certainly until something better comes along.

¹³ Turning the tide? A review of the first five years of the New Zealand Biodiversity Strategy. The Synthesis report. 2005. W. Green and B. Clarkson.

¹⁴ Hughey et al, *ibid*, p. 39.

And then he would start a dialogue with those who thought otherwise.

I know the same passions drive you that drove him so many years ago. Forest and Bird has taken on lots of challenges and won in the past. I know this one is well within your power to achieve as well.

Thank you.