

The original

Predator Free New Zealand - PFNZ

Founded in 2008



'Restoring the mana of the whenua'

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Executive Summary

Extinction is forever

The original 2008 Predator Free New Zealand's (PFNZ) end game is to eradicate the four introduced mammalian predator species – rodents, mustelids, (stoats, ferrets and weasels), possums and feral cats - from mainland New Zealand using predominately non-toxin trapping methods.

Immediate action is required to eradicate these introduced species or our country's rapidly increasing list of endangered native flora and fauna will face inevitable extinction. The ripple effect of this would spread far beyond just New Zealand's unique, irreplaceable biodiversity but into every part of our society. Our 'clean green' image, which underpins so many of our major industries including tourism, fishing, agriculture, dairying, wine, etc., would become untenable.

Trapping technology has reached an advance stage where non-toxin predator eradication is a reality. Lures, bait and PFNZ's preferred self-resetting traps are integral to a truly 'clean green' approach to saving our native species. These New Zealand invented and produced traps are so successful they are sold in 17 different countries around the world.

The past clearly tells us that eradication, using toxins is not working. It is expensive, damaging to our environment and our overseas brand ~ it is failing us as a nation.

Conversely, a non-toxin predator free New Zealand would become a flagship 'which other countries can refer for their own conservation efforts.

Achieving a predator free New Zealand requires a holistic approach, a buy-in across all sectors of society, from private home owners to businesses and community groups supporting predator trapping programs in public spaces. PFNZ has identified many social and economic benefits ranging from environment to employment opportunities for our youth even to our prisoner population.

This document outlines the projected costings and requirements associated within a 13 to 20 year programme to eradicate these extinction causing species.

Doing nothing is not an option. We have no time to dwell on what should have been done. Without quick decisive action New Zealand's natural taonga, our children's heritage will be gone forever.

A non-Government, (NGO) predator free New Zealand is this country's only chance.

Introduction

This document is the updated version of the original PFNZ 2009 plans for the task of eradicating the four introduced mammalian predator species from mainland New Zealand: rodents (rats and mice), mustelids (stoats, ferrets and weasels), possums and feral cats.

Creating a predator free New Zealand would be the **biggest 'green' initiative** in the world. It will be a template for the elimination of introduced pest animals for the rest of the world.

New Zealand is listed as one of the world's 25 biodiversity 'hot spots'. However, the reason we are listed as a 'hot spot' is that we are a region with a large significant reservoir of biodiversity that is threatened with extinction which differs from most others ~ it is the predation by introduced mammals in the most part, not land use conflict that is causing the rapid decline of our unique wildlife. New Zealand is facing mass extinctions on a scale not seen since the dinosaurs – including 81% birds, 72% freshwater fish, 88% reptile and 100% frogs. (*Ministry for the Environment 2015 report*). It is clear that introduced predators are one of the most significant threats to our biodiversity. Not only are they a direct predator of eggs and nestlings of forest birds, but also insects, reptiles, invertebrates, seeds and seedlings.

Background

Unique assemblages of animals and plants have evolved under the geological and climate conditions that prevail in New Zealand.

These plants and animals are what makes New Zealand unique - our toanga and our heritage. These are "our Tower of London, our Pyramids, our Sydney opera house, Sistine Chapel or Eiffel Tower" (quote, Sir Paul Callaghan, 2011).

Those assemblages are irreplaceable and are appreciating in value. They will oversee the retention and expansion of native plant cover, which is the best cover for retaining elements of our precious soils, and this in turn will ensure that our soil and water quality are enhanced through reducing erosion and contamination of our rivers, lakes and streams. So, they become resources that maximise recreational, aesthetic and utility values.

These rivers, lakes and streams are the building blocks of our agriculture and tourism-based economy and the main source of renewable electricity generation that we have. Without the assemblages of our native birds, plants, insects, reptiles and invertebrates

our unique landscape/forests will die and erosion will intensify, turning our rivers, lakes and streams into putrid, fetid wastewaters.

Each introduced tree climbing mammalian predator species eats and destroys all life stages of our natural flora and fauna and they continue to expand into new areas, extending their range, further driving native population decline. The rate of this attrition/predation is steep.

A non-Government, (NGO), PFNZ is a vehicle with which to raise funds and to place and supply non-toxin self-re-setting traps to every New Zealand property and throughout its forests, free of charge.

Eradication

Immediate eradication of the key predators is essential before species decline overwhelms us and it is too late or too hard to reverse the trend. (Ministry of the Environment report 2015 and the Parliamentary Commissioner for the Environment 2016 report.)

It is critical we start work now on developing plans, strategies and programs that are bold, or we lose what makes us unique. For the last 50 to 60 years we have been employing 'control in perpetuity' to manage the predators.

Increasing, current predator control methods and products are not a long term strategy as past efforts have, at best, only slowed the ongoing biodiversity decline. Continuing with current methods will not even achieve biodiversity maintenance; it will only postpone the extinction of our native birds, insects, invertebrates and reptiles. Toxins by their narrative are control in perpetuity. The precarious state of our unique wildlife is testament to its failure.

Extinction is forever ~ when it is gone we will never get it back

Funding

We have identified a number of long term funding streams/sources and combined with philanthropic and corporate donors which may remove a large proportion of the financial burden from the taxpayer.

As acknowledged by Maggie Barry, the previous Minister of Conservation, letter 22nd Aug. 2016, (Appendix b), there is a philanthropic and commercial interest from New Zealand and abroad.

The current funding regime of predator trapping and toxin applications, combined with the funding of Crown Research Institutes, Universities and private enterprise into research and development of new and novel toxins and their applications, we believe, is likely to exceed the total cost of a non toxin predator free New Zealand.

It is time to change, it is obvious that current policy is failing, the dire straits of our wildlife is testament to that failure, or shall we carry on doing the same thing time and time again and expect different results, as Albert Einstein said 'insanity'.

It is worth remembering that 'control' has to be repeated year after year.

Non toxin trapping

Vast amounts of research dollars have been invested to retain and increase the current control tools ~ by comparison, precious little has been spent on the latest non-toxin self-resetting technology that have proven results.

To be fair, there was no other option available during the last 50 years to complete a mainland eradication ~ but with today's latest self-resetting trap technology and the development of 'super lures' - sex and food - eradication of these extinction-causing imported animals is now an economic reality. These non-toxin self-resetting traps are now sold in 17 countries world-wide such as the Galapagos' Islands, for rats, mice, ermine, (stoats), grey squirrels, feral cats, mongoose and snakes.

The Department of Conservation's own trials of this technology show that the non-toxin self-resetting traps show better results than any other method. (Appendix a)

National Benefits

The removal of the predators from the mainland will deliver both social and economic benefits to all parts of society and, quite simply, it has to be done. A non-toxin PFNZ will grow an inclusive, innovative economy for the benefit of all New Zealanders.

The link between predator removal and other social and economic goals of government are inseparable.

We will be seen by the rest of the world to be responsible land managers and leaders in biodiversity restoration, (as a signatory of the Rio de Janeiro United Nations Biodiversity Treaty 1992, we are bound to protect our flora and fauna). A non-toxin PFNZ will promote New Zealand as premier eco-tourism destination enhance and

ensure our continued reputation as a truly quality producer of wine, fish, meat, dairy, fruit and agriculture products.

- A PFNZ is a contagion of connectivity,
- Repair, enhance and empower New Zealand's international 'Clean Green' credentials on the world stage, allowing exporters and the tourism industry operators to charge a premium for their products,
- Landcare researchers estimate the economic and tourism benefits of a PFNZ to be **\$9.32 billion**, (Russell. J, Byron. A, Innes. J, Brown. P. 2015, (appendix c)
- Remove a very large burden of work from an already overburdened Department of Conservation,
- Reducing the cost to the taxpayer by an order of magnitude, our studies show that if a PFNZ was an NGO, it will be possible that philanthropic/corporate donors will produce 50% of the total cost of a PFNZ and that figure could be as high as 75%, (appendix b)
- A PFNZ will grow an inclusive innovative economy for the benefit of all New Zealanders and enable businesses to use a non-toxin PFNZ as leverage to attract 'premium' returns for their produce and tourism,
- A PFNZ is the ultimate in business and brand sustainability, strengthening the national identity upholding the principals of the 'Treaty of Waitangi' whilst improving New Zealanders lifestyles and wellbeing,
- Unifying the population to a common goal, returning the pride New Zealanders once felt for their country,
- Regenerating depleted native forests assisting in our nations 'carbon sequestering ~ climate change,
- Regional employment opportunities and business involvement, (helicopter, trucking companies, trap and lure manufacturing.),
- 70% of mainland New Zealand is not able to be eradicated by toxins,
- Remove the possibility of human and livestock accidental poisoning, (this has happened),
- Ceasing the ever increasing costs of 'control' ~ \$100m plus pa,
- Removal of tens of thousands tonnes of highly toxic substances from our environment each year,
- The world needs some good news.

Structure and Governance

The structure of the governance of a PFNZ is of vital importance and dictates that it has to be a non-Government Organization, (NGO), with no political appointees, run along strong business and ethical lines with a CEO and a small board of directors. This will protect a PFNZ from future political interference. We have solid evidence, (appendix b), that, given appropriate legal and administrative structures, large overseas businesses, corporations and philanthropic foundations would be prepared to participate (with funds), thus relieving the burden from the taxpayer ~ along with other compelling reasons because:

- a) There is within the community a healthy level of distrust of politicians, bureaucrats and indeed government departments - New Zealanders have to take ownership of a PFNZ for it to succeed;
- b) An NGO cuts through levels of bureaucracy wastage and delivers a higher percentage of funds for its mandate;
- c) And, PFNZ has just one mandate: “To eradicate the four extinction causing introduced species from the mainland of New Zealand”;

A politically independent non-toxin NGO PFNZ is vital to attract interest/funds from international corporations and businesses along with grants from overseas philanthropic foundations. An example; the Packard and Bill and Melinda Gates Foundations together have a combined wealth in excess of \$US140 billion. Because of the uniqueness, boldness and global importance of a PFNZ, we know that a number of these and in our opinion other foundations, corporations and businesses, will find a PFNZ attractive and be willing to participate, relieving the burden from the taxpayer by an order of magnitude (*Appendix b*).

The current Predator Free New Zealand Charitable Trust and Predator Free 2050 Ltd are in reality Government entities, registered and owned by the Department of Conservation. The laws of the donor countries forbid donating to foreign Governments' entities, (human trafficking, drugs, illegal arms trading, terrorism, etc.).

Employment Strategy

As predator numbers are reduced, the fauna, (insects, birds, invertebrates, reptiles) numbers will increase proportionately. The requirement of re-establishing lost flora, our wildlife's food and shelter, is an urgent task.

An important component of the PFNZ concept is the opportunity to create meaningful employment with ongoing educational and employment pathways throughout New Zealand. Youth unemployment is a problem that is not resolving; current policies and strategies do not appear to be reversing these trends. PFNZ believe this is an ideal opportunity to create positive outcomes for today's unemployed youth.

The natural affinity of Maori people toward the outdoors and the land lends itself toward producing long lasting employment opportunities within a PFNZ for hapu and iwi throughout New Zealand.

A PFNZ will require young people to undertake trap/lure placement and GPS recording of sites. They will do monitoring and maintenance of the traps and lures, using the non-toxin self-resetting technology (these have no licensing requirements).

Candidates would be instructed in bush craft, map reading/navigation, outdoor survival, communications, search and rescue techniques, occupational health and safety, first aid, logistical planning and the benefits of working as a team. These are skills that can be taught without the need for formal education certification, all of which would deliver the self-belief and confidence that experts tell us is the main factor in youth unemployment.

Additionally, physical awareness, activity/fitness and nutrition will be promoted.

The employment opportunities that manifest from here are many. These include education into flora and fauna, allowing the candidate to upskill toward tertiary education qualifications if desired. An example is as a Wildlife Ranger, ensuring the ongoing protection of the local biodiversity; or the opportunity to join the burgeoning tourist industry as a guide.

Combining the above skills and experience with cultural/indigenous local history and legends, candidates would be in great demand by national and international tourist alike.

Native flora plantings will be required throughout New Zealand and will require dedicated teams to plan and carry out this essential work.

This process will in itself produce a number of employment opportunities, such as determining species allocation using historical and geographical data, the species of native wildlife to be released into the area, climate change and invasive introduced

plant species eradication, etc. This is an opportunity for further tertiary education in botany.

Large-scale breeding and management programs of endangered wildlife, with facilities across the country, will help to build new or boost current populations of native species on the mainland. Currently we are able to breed species like; Kaka, Kakariki, reptiles, etc.

Captive bred populations will be released into newly created predator free areas. By using limited numbers of wild species to start breeding programs, the impact will be minimal on the existing wild populations. The centres can also be used to inform and educate the public, schools and conservation groups about conservation.

Prisoner Involvement

PFNZ would investigate the possibility of a concept/plan to organise, where possible, the creation of specialised native species plant nurseries throughout the country's prisons, thereby creating educational opportunities for the prisoners in horticulture, propagating and nurturing native seedlings, disease control, composting, irrigation, etc, skills to use on their release.

These nurseries will supply 'not for profit' conservation projects (there are 5,000 throughout New Zealand), farmers and local government to obtain a ready supply of much needed geographical-appropriate native species at a peppercorn cost.

On their release, former prisoners would be encouraged to join the ranks of PFNZ field staff to further his/her horticulture experience, eliminating the so-called revolving door prison practice. This would provide all prisoners the opportunity to re-join society with worthwhile paid employment pathways and adjustment to the outside world rather than reverting back to old criminal habits and companions, thus assisting in lowering our prison populations.

The result would be a reduction in cost to the taxpayer, a better society and a better country.

Financial feasibility scoping of creating a PFNZ

Using non-toxin self-resetting technology.

No allowance for cost of living increases or inflation has been allowed for. Assumptions and predictions are based on historical and current knowledge.

Total of 8 million hectares of national Conservation Estate	
Allowing for 2 traps per hectare	16 million traps
1.5 million Residential homes, est;	
One trap per residential home	1.5 million traps
Urban and suburban parks, lakes, rivers and streams	1.8 million traps
Total traps	19.3 million
19.3 million @ \$100 ea (as per manufacturer quote)	\$1.9 billion
Lure and gas replacement @ \$12 ea estimated	\$1.2 billion
300 trap placement personnel @ \$100,000 ea.pa	\$30 million pa.
300 personal logistical costs @ \$3000 ea. @ week x 40 wks	\$36 million pa.

DOC Estate (8m ha)

Allowing for 23 trap placement per day per man x 300 trappers x 5 days x 40 weeks, 1st year = 1,380,000 traps installed.

Second year: 70 personal to replenish gas and lures, 230 trapper's x 23 per day x 5 days x 40 weeks = 1,058,000 traps installed.

Third year: requires a further 70 trappers replacing lures and gas. 160 trapper's x 23 per day x 5 days x 40 weeks = 736,000 traps installed.

Fourth year: 60 trappers transferred to the task of installing and enabling of the Goodnature traps in 1.5 m homes leaving 100 trappers to complete DOC estate ~ 460,000 traps pa.

Using this methodology, it will take between 13 and 20 years to cover the 8 million hectares of the DOC estate and complete home installation.

Note; volunteers are not included in the scoping. It is expected that volunteers, (FMC, DSA, Rotary, Lions, etc.) will make a major contribution toward trap placement, lure and gas replacements, reducing scoped costs and timelines.

Residential Homes (1.5m est.)

Nearly all buildings within New Zealand can expect to have a resident rat population in their roof space at some time.

A common cause of residential house fires in this country is rats' requirement to chew to wear down their continually growing incisors. One of their favourite chewing materials is electrical wiring, causing electrical short circuits that result in roof/ceiling fires.

A number of strategies have been developed for the placement of self-resetting traps, for example in the ceilings of every home throughout New Zealand including:

1. In the fourth year of the home installation programme, trappers/educators accompanied by a member of the New Zealand Fire Service will visit schools and other educational institutions throughout New Zealand to explain to students the risk of ceiling fires. *(This strategy will have the backing and support of the insurance industry.)*

The trapper/educator will explain the health hazards that rats in the ceiling pose to the household, i.e: rats defecating/urinating in the roof void with the possibility of spreading disease along with discarded food material (bird carcasses, rotten fruit etc); bringing with it the possibility of cockroach, lice and flea infestations. After a demonstration of the operation of the traps and how and where to place them in the ceiling, each student will be given a free trap. If the recipients' family is not able to place the trap themselves, PFNZ will place the trap free of charge.

2. Local and regional councils will be given traps free of charge to distribute to their ratepayers on request. PFNZ will offer a free advice service either online or via a phone link and will offer a free installation service for the elderly and infirm.
3. Iwi and hapu will be approached with the offer of having free devices delivered to every Marae for its members, with demonstrations of operating and placement of the devices.
4. Lions and Rotary clubs will be encouraged to distribute and place traps free of charge. Local Chambers of Commerce's will likewise be encouraged to engage with businesses.

(Items 2, 3 and 4) will be included in the first year of the programme.) It is envisaged that every household in New Zealand will have a trap installed and operating within a 5 to 6-year time frame.

Urban Parks, Rivers and Streams

These areas would generally fall under the responsibility of local and regional councils.

As there are no licensing requirements for the handling and placement of non-toxin self-resetting devices, local community groups including the Lions, Rotary, Scouts, Keas, student volunteers, etc., will be encouraged to assist councils in covering these public areas, fostering community spirit and social enterprise.

First Year Costing Estimates

Traps.....	\$138 million
Lures and gas	\$16.5m
Trapper, etc.....	\$66m
Total.....	\$220.5m

Second year costing estimates

Traps.....	\$105m
Lures and gas.....	\$29.1m
Trappers, etc.....	\$66m
Total.....	\$200.1m

Third year costing estimates

Traps.....	\$73.6m
Lures and gas.....	\$34.6m
Trappers, etc.....	\$66m
Total.....	\$174.2m

Fourth year costing estimates

Traps	\$46m
Lures and gas.....	\$40.1m
Trappers, etc.....	\$66m
Total.....	\$152.1m

Fifth year costing estimates

Traps.....	\$46m
Lures and gas.....	\$45.6m
Trappers, etc.....	\$66m
Total.....	\$157.6m

Total costings estimates

10-year total completion cost.....	\$4.4 billion
15-year total completion cost.....	\$4.7 billion
20-year total completion cost.....	\$5 billion

- *The above scoping figures are based on a base 'trap capture rate ' (TCR) of 68% which is high. It is the author's opinion that the overall DOC estate TCR will be lower enabling fewer total traps purchased than has been scoped for.*
- *The above estimates have not included the PFNZ redundant trap strategy benefits, (RTS).*

After the completion of the residential New Zealand-wide trap installation, (taking five to six years) the returning personnel (trappers/educators) and their accompanying weekly expenditure funds will increase the national PFNZ effort.

They will at that point place emphasis on possum and feral cat eradication and cat/possum trap purchasing, (approximately 30,000 pa) plus the completion of trap placement throughout the country.

It is envisaged that between \$14m to \$20m of the residential trap instalment programme weekly expenditure funds will be surplus to requirements over the programme's six year expected life. These monies will be directed to the purchase of feral cat/possum traps.

Trapping Strategy

PFNZ's redundant trap strategy (RTS) utilises the 10 year plus life span of the devices.

Once a scientifically-based time assessment of zero population of predators has been established, the traps are moved to another location. It is estimated that within its 10 plus year life span, each trap could be moved as many as four times or more, reducing the costings itemised in the previous section by an order of magnitude.

Recent improvements and advances in trapping technology have been made, and more can be expected in the near future. The efficacy and longevity of the self-re-setting traps and super lure technology ensures that the animals come to us from a far greater distance, rather than us to them. PFNZ will encourage the development of an industrial all weather aerosol device to deliver regular airborne scents to attract animals to the trapping area.

Again, this will greatly increase the catchment area and reduce trap and logistical costs.

PFNZ's strategy is EEE:

- Encouragement (aerosols)
- Encounter (trap density)
- Engagement (trap lure)

The self-resetting technology will deliver zero populations quickly, as per the 'Hart Hill and Native Is.' (68% ship rat index) (*appendix b*), allowing the revival of our precious wildlife almost immediately without the collateral killing of any of our native species.

No other mainland method or strategy can achieve those objectives.

It is not unreasonable for PFNZ to expect a discount on scoped trap, lure and gas price from bulk purchasing.

A CEO's salary and director's fees plus auxiliary staff's wages have not been included in the above calculations and are expected to be less than \$1m per annum. The above scoping has, we believe, abundant flexibility to accommodate these costs.

No attempt has been undertaken in this scoping to gather information concerning income tax and GST take/benefit to the Government.

Social Conscience

In our opinion approximately 10% to 13% of New Zealand's population will want to contribute to a PFNZ by funding their own devices, lures and gas replacement (social conscience), further reducing the above costings.

We recognise that there may be a requirement to increase the urban and suburban trap numbers, it will depend on the 'social conscience' sector participation. This will only become apparent after a large proportion of areas have been covered.

There is a possibility that the New Zealand Defence Force (New Zealand Army and Royal New Zealand Air Force) can be enlisted to combine navigation, bush craft and other military exercises to assist PFNZ with personnel, trap, lures and gas deliveries.

Conclusion

A number of studies and their results lead us to believe that if current programmes/strategies, (control in perpetuity) are to continue, even at an accelerated rate of application and increased dosage, large scale extinctions are inevitable.

This was the genesis of our original predator free New Zealand, (2007/08).

These studies show that if New Zealand were to lose native and endemic species on a large scale as predicted above, our already dubious 'Clean Green' international brand would be forfeited and become extinct like our species, never to be used again.

Our studies further show this forfeiture would herald a minimum net loss of \$1 billion from the country's trading account/profits, each year - forever.

Note: this document was produced using the feedback, knowledge, experience and input from many organisations and persons over the last 10 years. 'Research by management' will be part of this 'living document'.

*"The definition of insanity is doing the same thing over and over
and expecting different results."*

- Albert Einstein

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