

# WHAT'S BUZZING?

News from the World of Pest Management



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P M A N Z  
PO Box 133215  
Eastridge  
Auckland  
1146 New Zealand  
Free phone: 0800 476 269  
(0800 4PMANZ)  
Email: [info@pmanz.nz](mailto:info@pmanz.nz)  
Website: [www.pmanz.nz](http://www.pmanz.nz)



**PRESIDENT**  
Sandra Charlton  
[Sandra@pestawaynz.com](mailto:Sandra@pestawaynz.com)

**EXECUTIVE SECRETARY**  
Denise Faulkner / Jo Wright  
[info@pmanz.nz](mailto:info@pmanz.nz)

## PRESIDENT'S PEN – SANDRA CHARLTON

Greetings to all our members out there,

Once again I received "that phone call" to remind me another message is required for the August newsletter.

I can honestly say, I have had the most challenging of months as President with the Draft Constitution that was emailed out for commentary and suggestions. What can I say except, it is all character building. The AGM will be of some interest.

I have to mention, the ladies in the office, Denise Faulkner and Jo Wright have done an exceptional job of translating the constitution into something that is readable and understandable. I am sure you will all agree that Latin is so last millennium.

I sincerely hope you will all be able to attend the AGM on 16th August, in Auckland in order to get this constitution correct. We need your valuable input.

PMANZ's mission is to ensure anyone who handles and applies pesticides is trained, and can become a qualified Pest Controller who applies his work with pride. We are an association that thrives to assist and influence the legislation that affects the industry.

To name just a few of the benefits of being a PMANZ member:

**Networking:** This is the most common and obvious benefit of joining an association. All the expertise in the pest management industry, can be shared amongst members to help your business move to the next level and become more prominent in your industry.

**Training and Education:** Continued education and up to date development, which is important in this fast-paced modern world we live in. Members have member to member learning and mentorship, able to share experiences and knowledge. All this at no additional cost.

**Information:** Members have access to a very informative website, plus newsletters, email updates and informative resources that help members stay on top of recent developments in our ever changing field.

**Best Practice:** The fast pace of technology and market competition means that these practices are constantly updating and changing. It is important to take advantage of any practice that can improve your business.

**Updates on legislation:** As we have just experienced, it is amazing how much one piece of legislation can impact an industry. PMANZ is devoted to updating members about these changes and notify members about how to prepare for these changes.

We have enrolled a record number of members this month, which we are very excited about, and look forward to meeting these members and helping them take full advantage of the benefits of being a member of an association that listens and shares their valuable input from them.

Best wishes

*Sandra*



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## FROM THE EDITOR



The June Training sessions around the country enjoyed good support in all the towns and cities I visited, with many members expressing their gratitude at a informative programme PMANZ provided.

The extent of misinformation and misunderstanding about the new requirements under the new Hazardous Property Control Notice, from EPA was an eye-opener.

I was pleased PMANZ covered that in detail and the new Health and Safety Act (Hazardous Substances) Regulations requirements for members. It cleared up some misgivings and put a lot of minds at rest.

For those of you who could not make it all the slides from those presentations are available in the members area under 'June 2018 Training' tab. In addition, I have summarised the salient points from the HSWA Regulations and EPA Notice on pages 6,7 and 8.

I can now confirm with certainty that Dr Robert (Bobby) Corrigan will grace us with his presence at the August 2019 Biennial Conference to be held at the Waipuna

Hotel and Conference Centre, Mt Wellington, Auckland over August 21-23, 2019. He will also be joined by Dr Cor Vink from our own Canterbury Museum, Christchurch. Full details will be available later in the year.

The debate continues about New Zealand's ambitious Predator free date of 2050. It seems to be making progress—see a full report in New Zealand news.

Recent challenges from MPI Animal Welfare Inspectors to one of our members have raised an new issue about the use of the commonly adopted habit of placing two Spin (revolver) Traps in a Tin Cat. Their concern is; once both spin traps have been activated, it then becomes a live catch trap, as a third mouse may enter the tin-cat before it is cleared of the other two dead mice. It will remain alive trapped within, and thus the trap would need to be monitored every 12 hours until cleared (as required under law). Under new regulations coming into force in October 2018, you can be fined \$300 for failing to do a daily inspection. Remote monitoring of live-capture traps is allowed.

You have been warned. This will have to be watched closely.

One sometimes hears of weird pest control stories, but the one on page seven, from one our Auckland members, must surely rate right up there with the best them. It's the best I have heard for a long time.

Warm regards  
Peter

*Send all comments or suggestions to  
Peter Barry on [peter@pestconsultancy.co.nz](mailto:peter@pestconsultancy.co.nz)*

### Fair Use Reporting

Articles provided in "What's Buzzing" are drawn from a number of sources. The source of the material is quoted, either by author, publication and/or organization, in line with the practice of 'Fair Use' reporting of news or information to PMANZ members for their ongoing education. The information contained in this newsletter is for member information only, and does not necessarily reflect the official views or opinions of the PMANZ Council and/or its members.





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**Bobby Corrigan, Ph.D., President, RMC Pest Management Consulting**

#### **Speaker Biography**

Dr. Robert M. Corrigan has been active in urban pest management for over 30 years. He serves a consultant who specializes in urban rodent pest management on a national and international scale and also as a rodent control consultant for several cities around the USA.

Dr. Corrigan has published over 160 technical articles in pest control and has authored or co-

authored four textbooks and several book chapters.

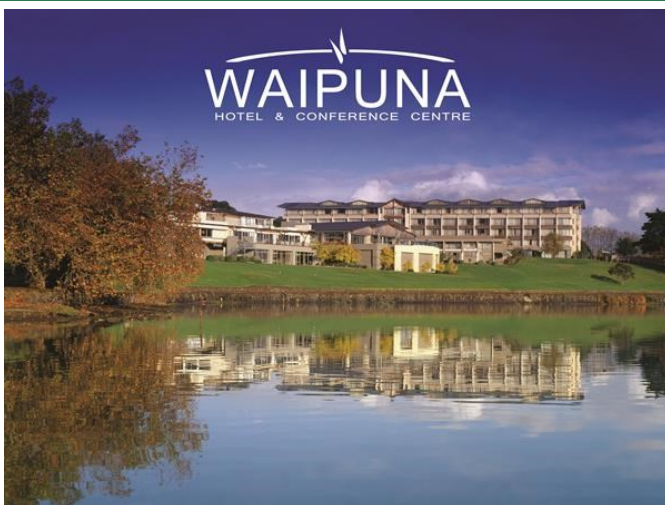
He has lectured in 46 states and 12 countries around the world. He has appeared in Time Magazine, The New York Times, National Geographic, The CBS Sunday Morning Show, The New Yorker Magazine, and multiple international radio shows and on-line magazines.

In the autumn of 2016, he appeared in the Morgan Spurlock (Director/Star of Super Size Me) Documentary: Rats!!

In 2005, Dr. Corrigan was awarded the EPA's IPM Award for his novel approaches to pest control and food safety, and in 2011 he received The City of New York's Distinguished Service Award for innovative research addressing the control of rats in New York City.

Dr. Corrigan was inducted into the Pest Management Hall of Fame in 2008.

Dr. Corrigan ran a pest control route in NYC for three years to save money for his college education. He holds an A.A.S degree in pest control (State University of New York); a B.S (Urban and Industrial Pest Control) from Purdue University, and his Masters and Ph.D. degrees in rodent control also from Purdue.



## **CONFERENCE VENUE AND DATE**

**August 21-23, 2019**

**Waipuna Hotel and Conference Centre is one of New Zealand's largest and most comprehensive conference facilities and is only 15 minutes from Auckland's city-centre and the international and domestic airports.**

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# STOP BAIT WASTAGE AND SAVE MONEY

**Gavin Wilson, *Technical and Marketing Manager Australia | New Zealand* , Liphatech**

Rodent bait is often wasted. It is typically due to mould or rot, or because insects such as slugs and snails attack the bait, sometimes even before rodents have had the opportunity to feed on it.

One way to reduce wastage – and therefore money – is by using innovatively designed rodent bait such as Liphatech's Maki Original and Maki Wrapped.

Liphatech discovered bromadiolone in the 1970s and has worked with this active for over 35 years.

During this time, the company has honed its knowledge of both how to stabilise the active ingredient and create bait formulation of the highest palatability. As we know, bait formulation is one of the most important factors in making an attractive and successful rodent bait.

Liphatech's bromadiolone is used in one formulation: Maki rodenticide bait.

The single-feed, 20 gram bromadiolone extruded Maki blocks are available in two formats:

Maki Original and Maki Wrapped.

Damp conditions and unfavourable weather can spoil otherwise sound baits. Mould-resistant Maki blocks, available as both Maki Original and Maki Wrapped, have been formulated to meet this challenge. Both are ideal for use high humidity and damp environments, and their high level of weather resistance and ease of installation make Maki blocks suitable for maintenance programs. The rodent blocks are also highly palatable and have added high edges to favour rodents' gnawing behaviour.

In environments with high pressure from insects, slugs and snails, additional steps are needed to prevent non-target pests from consuming the bait; Maki Wrapped was developed to address this issue faced by pest managers. Maki Wrapped is the same bait formulation as Maki Original but is protected by an outer plastic sachet, offering an innovative and effective line of defence against non-target pests. This additional protection means pest managers can easily identify and report on bait consumption, secure in the knowledge that rodents are responsible. Maki Wrapped also has the added benefit of requiring zero contact between the bait and the end user.

Using Liphatech bromadiolone formulation in either Maki Original or Maki Wrapped provides pest managers with two options to save money by preventing wastage of rodent baits.

Maki Block & Maki Block Pail

## MAKI ORIGINAL



Maki Wrapped & Maki Pail

## MAKI WRAPPED



# Hazardous substances Role of EPA and WorkSafe

**The hazardous substances reforms bring changes to the roles of the EPA and WorkSafe.**

On 1 December 2017 the rules around managing hazardous substances in the workplace transferred from the Hazardous Substances and New Organisms Act (HSNO) to the Health and Safety at Work (Hazardous Substances) Regulations.

## What laws have changed?

The regulation of hazardous substances that affect human health and safety in the workplace now sits under the Health and Safety at Work Act.

There are two main pieces of legislation that are affected by the wider hazardous substances reforms:

- **The Hazardous Substances and New Organisms Act 1996 (HSNO)** has changed.

The EPA focuses on 'upstream' activities under HSNO - It is responsible for setting the rules for classification, labelling, safety data sheets, packaging and disposal, as well as for protecting the environment and public health.

Under HSNO, WorkSafe enforces the ecotoxic and disposal requirements in the workplace through the Hazardous Substances (Hazardous Property Controls) Notice 2017

- **The Health and Safety at Work (Hazardous Substances) Regulations** have been introduced.

Under HSWA, WorkSafe focuses on the 'downstream' use, storage and handling of hazardous substances in workplaces.

Broadly, the EPA continues to have responsibility for approving and classifying hazardous substances; while WorkSafe implements and enforces workplace requirements provided in the Health and Safety at Work (Hazardous Substances) Regulations. ( see summary table below )

	 Hazardous substance rules to PROTECT PEOPLE from WORKPLACE activities SET UNDER HSW ACT	 Hazardous substance DISPOSAL rules and rules to protect the ENVIRONMENT in WORKPLACES* SET UNDER HSNO ACT*	 Hazardous substance rules for IMPORTERS, MANUFACTURERS and SUPPLIERS** SET UNDER HSNO ACT*	 Hazardous substance rules to PROTECT PEOPLE and the ENVIRONMENT in NON-WORKPLACES SET UNDER HSNO ACT*
Regulator	<b>WORKSAFE</b>	 Environmental Protection Authority Te Mana Rauhi Taiao	 Environmental Protection Authority Te Mana Rauhi Taiao	 Environmental Protection Authority Te Mana Rauhi Taiao
Enforced by	<b>WORKSAFE</b>	<b>WORKSAFE</b>	 Environmental Protection Authority Te Mana Rauhi Taiao	<b>COUNCILS***</b>

\* There are other hazardous substance environmental and disposal rules set under the Resource Management Act and local council bylaws. These rules are enforced by local, district and regional councils.

\*\* Such as labelling, packaging, safety data sheets and restrictions on ingredients in certain hazardous substances products.

\*\*\* City and district councils.

## **Under Health and Safety at Work (Hazardous Substances) Regulations, and Hazardous Property Control Notice 2017 there are a number of important things you must do.**

### **1. PREPARE AN INVENTORY**

Set up and keep an inventory of all pesticides used, handled or stored at your premises/business. And store substances in correctly labelled, leak proof containers.

Keep a copy of the manufacturer's safety data sheet for all of the hazardous substances stored on your property or in your vehicle.

- Eliminate the unnecessary - Only store the substances you will use and need. There isn't any point wasting your time recording data about old substances you won't need in the future.
- Reduce the risks - Provide staff with the correct safety gear and apparel (PPE)

### **2. PROVIDE INFORMATION, TRAINING AND INSTRUCTION**

Make sure your team understands how to safely handle, use and store your pesticides.

Train them about the differences between the products they personally use and provide them with relevant information, instructions and supervision.

This includes making sure workers know of the hazardous substances in their work area, along with the dangers they pose, and get the training and supervision necessary to operate safely around them and with them.

#### **What instruction and training must be provided?**

Workers need training followed by practical supervised experience on:

- The health risks and safety issues associated with the hazardous substances they work with.
- How to safely use, handle, manufacture, store and dispose of the substances.
- The safe use of associated equipment, including personal protective equipment.
- Their obligations under the regulations.
- Their responsibilities and actions to be taken in an emergency.
- Even if a worker has had similar training previously (for example at a different site), they will still need site-specific training if they are new to the workplace.

#### **Records of training and availability**

A record of training and instruction provided to each worker **MUST** be kept, and made it available to inspectors or compliance certifiers.

### **3. PROVIDE SIGNAGE FOR PESTICIDE (Class 6.1A, 6.1B or 6.1C in particular) applied in indoor environment**

A PCBU with management or control of an indoor area for which a restricted entry interval has been set must ensure that signs are erected outside the area, at every routine point of entry into the area from the start of the application until the end of the application or the end of the restricted entry interval, whichever is the later.

#### **The signs must—**

- (a) state that an application is being carried out using a substance that is toxic to humans; and
- (b) state that entry into the area is not permitted unless personal protective equipment is worn; and
- (c) identify the PCBU with management or control of the area; and
- (d) state the day on which the application commenced; and
- (e) state the time and date of the end of the restricted entry interval; and

The PCBU must ensure that the signs are removed within 72 hours of the end of the application or restricted entry interval, whichever is the later.

PMANZ recommend that even if signage is not required, it is best practice always to have them as they warn other people at the workplace, and emergency services, that hazardous substances are present.

#### **What needs to be on the sign?**

There are some requirements for signs generally. For example, they must:

- be made out of a durable material that won't easily fade
  - be in plain English
  - readily understandable
- the information (correct words and pictograms) must be clearly visible and legible from not less than 10 metres away under varying conditions (for example, rain or poor light)



#### 4. KEEP A RECORD OF APPLICATION (6.1A, 6.1B, 6.1C)

Ensure that a written record of each application of the substance is kept, if the application is in a place within a workplace—

- (a) where members of the public may lawfully be present; or
- (b) where the substance is likely to enter air or water and leave the place.

A PCBU with management or control of an organo-phosphate or carbamate plant protection insecticide applied for plant protection purposes must ensure that a written record of each application of the substance is kept. The PCBU must ensure that the written record is kept for at least 3 years after the date on which the substance that the record relates to is applied.

**NOTE: 6.1C = Key Beta and Resposar**

#### 5. EMERGENCY MANAGEMENT REQUIREMENTS

A PCBU with management or control of a workplace where class **6.1A, 6.1B, 6.1C** substances are present must ensure that either or both of following are readily available:

- (a) equipment and materials suitable for dealing with leaks and spills (whether major or minor), and clean-up equipment:
- (b) chemicals for neutralising or decontaminating spills and absorbent materials

#### 6. PESTICIDE IN GRANULAR FORM

(1) A person who applies a **class 9.3** pesticide (e.g **Biforce, KAS, Antstop and Brigade**) in granular form to an application plot must take all reasonable steps to ensure that—

- (a) the granules are completely covered with soil once applied; or
- (b) birds are prevented or deterred from foraging on the application plot.

NOTE: application plot means the part of the application area where the substance is, or is intended to be, directly applied.

#### 7. PROTECTION OF INVERTEBRATE POLLINATORS

If a **class 9.4** substance (**most synthetic Pyre-throids**) is applied to a plant, and it is in a form that non-target invertebrate pollinators are likely to be exposed to either during, or after, its application.

A person must ensure the application does not include any—

- (a) bees that are foraging; or
  - (b) plants (including trees and weeds) that—
    - (i) are likely to be visited by non-target invertebrate pollinators; and
    - (ii) are either—
      - (A) in flower or part flower; or
      - (B) likely to flower within the period specified
- This does not apply if the application plot is indoors, and the substance is contained within the facility.

#### 8. PREPARE FOR EMERGENCIES

Unless you are storing huge quantities of pesticide, it is not necessary to have an emergency response plan in place except for Class 6 pesticides as mentioned earlier.

However, be sure that your team knows how to use the safety equipment, personal protective equipment and how to give first aid if required. Include your admin team.

**PMANZ Suggestion** - What you decide is up to you, but be aware that in the possibility of a vehicle accident you could run into emergency services, and if you have a sign-written vehicle with Pest Control on it, they will want to know what chemicals you have in your vehicle. Have an up-to-date inventory with all your pesticides and all the latest SDSs, and if there is spillages you must contain it with a spill kit.

So do have an emergency plan, so that you know what to do in the event of an accident, including who to contact, e.g. your partner/colleague etc.

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## Gaining an Edge

### Identify your best customer

Who is your best customer? What type of customer do you most want to service? Consider all angles: how much they pay, how good you are at meeting their needs, how needy they are, how far away they live, etc. You need to know exactly who you need to target and why. Knowing this will allow you to make effective management decisions later. Decisions like who to not take on as a customer, who to target with marketing, what type of marketing to do, and others cannot be effectively made without knowing exactly who your best customers are and why they do the things they do.

### Develop a plan to get them/differentiator

Why will your best customers go with you instead of XYZ Pest Control? What makes you different? Is it your good looks or charm? Come up with concrete evidence that customers will believe. This needs to be focused. For example, DO NOT make your differentiating factors be: 'getting rid of bugs the best, cheapest, best customer service, best commercial service, most technologically advanced, nicest, best residential, best inspector, best lawn mower, best dog washer, and more!'

Many of these statements inherently contradict one another and confuse consumers. Also, they give the impression that you will do anything for a buck, which will come back to haunt you. You want to focus on your type of customer and cater to how they respond.

Consider **Apple, Inc's** example, they understand that they offer the better built, longer lasting product in most cases, with fantastic customer service to back up and reinforce the quality image their brand pushes. If

superior quality, customer service, and longer lasting products don't matter to you as much, you buy a \$400 laptop instead of one from Apple that retails at \$2100. Apple knows that and is alright with it. Their best customer is the customer that wants quality and great customer service.

Try to focus your competitive advantage instead of dividing your attention in a vain attempt to get every customer available. Do something like this: 'we offer the best residential pest control available. No one is better at getting rid of bugs at your home, and we back this up by the industry's best residential guarantee.' Focus and dominate your focus.

### Know their behaviour

Where do they work, how much do they make, where do they live, why do they buy pest control? Are all questions you will need to answer. When you know these answers, good management decisions almost make themselves.

### Use an effective CRM

In order to actually have the data needed to answer the above questions, use a good software program! This is the lynchpin in running any effective business. Use what today's technology can offer to gather data, make decisions, and dominate your competition. Know what your competition doesn't about your target market and use that information to win customers. Having old, clunky, and out of date technology that isn't cloud-based and/or doesn't work across any device will severely restrict your ability to gather data, not to mention gives the impression to customers that you are behind the times.

The technology is out there! Use it!

## NEWS BITES

### AFTER 17 YEARS AND 1,800 TESTS, RESEARCHERS FIND CAT FLEA PESTICIDE REMAINS EFFECTIVE



In a 17-year study of cat fleas (*Ctenocephalides felis felis*), researchers tested egg samples—adult fleas being too difficult to collect and delicate to maintain—for signs of decreased susceptibility to the insecticide imidacloprid. The results showed no evidence of resistance to the insecticide among the tested cat flea populations, which came from 10 countries across the globe. (Photo credit: Michael K. Rust, Ph.D.)

Eggs from more than three thousand populations of fleas from cats and dogs were collected in the 10 countries involved. Researchers opted for eggs because adult fleas are too difficult to collect and delicate to maintain. Collecting the eggs required considerable hand labor and so much skill that some clinics had to make several tries before success. Veterinarians and clinic staff brushed them off infested animals in cages with a grated floor. Below the cage was paper onto which the eggs fell, then to be poured through a sieve and funnel into a glass tube. Most tubes were shipped in Styrofoam coolers with ice packs, although some were packed in bubble wrap and sent in an envelope by overnight mail. Veterinarians also filled out questionnaires on the history of each pet from which eggs were gathered.

The researchers exposed 2,200 of the samples, or isolates, to the insecticide. “A minimum number of eggs tested would be 40 per isolate for one test,” says Rust, but he adds that it is probable that “more like 250,000 to 350,000 eggs were tested.”

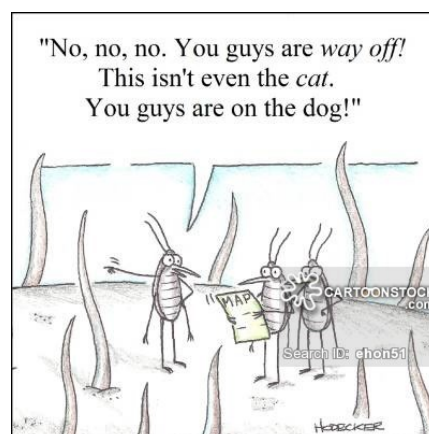
When an isolate was tested, some of the eggs were left untreated as a control. Eggs hatching proved the isolate was viable. Of the 2,200 tested, 1,837 were considered valid. Isolates that showed the potential of resistance were placed on cats to rear eggs for testing on varied concentrations of imidacloprid to develop a curve describing response to different doses. Results of testing proved to the satisfaction of researchers that the all of the isolates remained susceptible to the insecticide.

“I think it is pretty remarkable that the study showed no reduced susceptibility to imidacloprid over a 17-year period,” says Rust. “I think we have developed a procedure by which other insecticides used to control cat fleas can be monitored.”

[Read More](#)

[“International Program to Monitor Cat Flea Populations for Susceptibility to Imidacloprid”](#)

Journal of Medical Entomology







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### CAN NEW ZEALAND REALLY KILL EVERY RAT, POSSUM AND



**The last rays of the days sunlight paint Mt Taranaki pink. A major new project has been launched in Taranaki to make the region predator free. Photo / Alan Gibson**

It's been nearly two years since New Zealand announced to the world we'd be free of pest predators by 2050. Are we any closer to winning the war?

Jamie Morton reports.

It had been raining for weeks in Taranaki.

When the clouds finally cleared this week, the mountain's new cloak of white snow shone resplendent against a brilliant blue sky.

It was a good day for pictures.

It was a bad one for pests.

At the foot of the Pouakai Range, in the rainforest garden Pukeiti, the region's leaders came together to declare war on every rat, stoat and possum in

more than 4500ha of farmland surrounding the national park.

A \$47 million, five-year battle would clear one wedge of countryside after another.

Cleaned-out areas, the gathering was told, would be bolstered against reinfestation by a network of natural barriers, traps and remote sensors clever enough to alert smartphones every time a vermin was killed.

Here was the largest-yet project of its kind: a beachhead from which New Zealand could reclaim its wilderness from the scourge of predators.

It seemed fitting that Taranaki should be where the fight starts - its lofty peak symbolic of the hike ahead.



To understand its enormity is to understand the damage already done.

For millions of years, a plethora of plants and animals thrived in an Aotearoa dense, green and far removed from the rest of the world.

That all changed, of course, when the rest of the world came to Aotearoa.

It took just 800 years for humans and the wave of pests we brought with us - rats, stoats, deer, ferrets, possums, hedgehogs, weasels - to obliterate a third of the native birds that flourished among our forests and waterways.

Gone with them are three of seven frogs, at least a dozen invertebrates, a bat, and perhaps three known reptiles.

Even after the onslaught, New Zealand could still boast one of the highest rates of endemism in the world, but much of what we had left was in bad shape.

Among 1000 native species either threatened or at risk of extinction are 81 per cent of birds, 72 per cent of freshwater fish, 88 per cent of reptiles, 76 per cent of marine invertebrates and 39 per cent of vascular plants.

At the edge of the abyss are extremely rare birds like kakapo, whose numbers had dwindled to around 130, the fairy tern, now with fewer than a dozen breeding pairs, and Haast tokoeka kiwi, of which just 400 remain.

Less known, but just as close to extinction, are species like the Canterbury knobbed weevil, the Mokohinau stag beetle, Limestone cress and Chesterfield skink.

That New Zealand could somehow turn the tide on the devastation - let alone replenish our forests with noisy native birdsong - has often been considered an impossibility, and for good reason.

There are enough pests in our wild to lay waste to 26 million native birds every year.

Killing all of them meant covering 26 million hectares of mainland countryside.

New Zealand hadn't even been able to achieve a complete eradication on its 220 sizeable islands - and that war began half a century ago.

With the limited resources of a small nation, whose best tool for the job remained blanket 1080 poison drops, how could it be done?

Article continues on next page

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email:  
info@liphatech.com.au





**Conservation Minister Eugenie Sage, speaking to crowd about a huge new drive to eradicate predators under a new programme announced this week. Photo / Alan Gibson**

Those fronting the effort have made a battle cry from a particular remark by one of our brightest minds, the late Sir Paul Callaghan.

"It's crazy, it's ambitious," the physicist told his last public lecture in 2012, "but I think it might be worth a shot."

Fast-forward to July 25, 2016, when former Prime Minister Sir John Key announced to reporters at Wellington's Zealandia that it wasn't just worth a shot, but a mission with a hard deadline: 2050.

And by 2025, New Zealand was to have reached towards four other big goals.

We would purge predators from a million more hectares - and show it could be done across at least 20,000ha without having to put fences up.

The campaign for our islands would be finally won.

And we would have a scientific "breakthrough" that could take at least one of the pests out of the picture.

Tasked with drawing in private investment and pinpointing large pest control programmes was a new venture, Predator Free 2050, with the Government to throw in a dollar for every \$2 contributed by businesses and charities.

What's happened since then?

Much of the work has been in mobilising: new appointments, new training programmes, a new strategic plan.

Across New Zealand, 45 landscape-scale projects like Taranaki's have applied to Predator Free 2050 for funding, all of them representing about 1.5 million ha of mainland.

Scientists have been given their own small war chest in the DoC-managed "Tools to Market" fund, for promising new weapons.

One project is developing a pre-made bait for aerial control, to be first trialled on stoats.

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One top conservation scientist, the University of Auckland's Dr James Russell, expected the boost would be enough to take gains that had been made around the country and lock them in for good, ticking one of the first boxes of the 2050 plan.

"For the first time in a while, we'll be moving beyond triage, to preventative medicine."

**One of the new smart traps which will be used on Mt Taranaki as part of a new drive to eradicate pests. Photo / Alan Gibson**

Another is an artificial long-life lure designed to attract rats over longer periods.

Then there was an army of community conservation groups setting traps, baiting stations, planting trees, and giving millions of hours of free labour.

"We reckon there some 200,000 New Zealanders who every year participate in some form of community conservation," Predator Free New Zealand chairman Sir Rob Fenwick said.

"On all fronts, there's been significant progress."

DoC itself received a much-needed shot in the arm in this year's Budget, receiving \$181m over four years, and an extra \$81.2m specifically for predator control. That was enough for DoC to run sustained programmes over 1.8 million hectares - an area the size of Northland and Auckland combined, and which Fenwick's group has projected it can match, separately.

Conservation Minister Eugenie Sage said DoC had previously had to go "cap in hand" to the Government for one-off allocations to help beat back plagues that hit when flowering beech trees littered forest floors with fresh seed.

"The new funding means that for the first time DoC has secure ongoing funding for landscape scale control."

Most importantly, Russell said, the new Government was being even more ambitious in their commitment to the programme.

"After two years the project still gets media attention locally and globally – it wasn't just a flash in the pan but something that really has momentum," he said.

"And finally, we're seeing even more ambitious projects commencing alongside a credible strategy."

He singled out the clearing of mammals from Auckland Island, possums from South Westland's Perth Valley, Hawke's Bay's Cape to City and the capital's Predator Free Wellington.

Manaaki Whenua-Landcare Research's Dr Andrea Byrom said while the cash injection was modest in the scheme of things, it was still a "huge signal".

"Personally, I'm very optimistic for DoC because the funding demonstrates to DoC staff that their work is important - we shouldn't under-estimate how much of an impact that will have on their enthusiasm to tackle big goals like Predator Free New Zealand."

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**Dr James Russell says he's more optimistic than ever about New Zealand's 2050 goal. Photo / File**

Byrom was also buoyed by a wave of support from Kiwis. A recent survey carried out by the Biological Heritage National Science Challenge, which Byrom directs, found 85 per cent agreed investment in pest control today would future generations, and around two-thirds were aware of the 2050 vision.

There was less support, however, for some of those next-generation technologies that we may have to turn to. Just a third of the respondents, for instance, were comfortable with using "gene drives", in which a small piece of genetic information can be edited and then passed to future generations of pests, potentially leading to a single-sex population that would eventually disappear.

Kiwis appeared to better favour other genetic interventions like the Trojan Female Technique, which used DNA tweaking to render male offspring infertile, and species-selective toxins.

Byrom pointed out that the current best estimate for complete eradication using existing technology, over the 30 years to 2050, was around \$9 billion - or about 5 per cent of GDP.

"So, it's not feasible for a small nation, even with international investment," she said.

"That means we need to control predators at much larger scales, yet for a fraction of the cost."

She believed the best approach was some sort of "self-disseminating" tool that could be shared from animal to animal, and, rather than just gene-editing solutions, there were a range of promising bio-technologies.

Alternatively, the country could use "non-disseminating" tools such as a species-selective toxin, which could be delivered within the next few years, but which still cost around the same as 1080 to roll out.

"So, we are back to the same issue that we need a very cheap tool that is socially-acceptable and can be applied for literally a few cents per hectare," she said.



**1080 remains New Zealand's most effective strategy to beat back large numbers of pest predators. Photo / File**

"That is the reason people are considering self-disseminating biotechnologies such as gene editing."

Russell agreed New Zealand simply couldn't afford to lay traps or poison across every 25m of wilderness.

"Many of the advances in the past, and many more in to the future, will be incremental advances, such as more ingenious traps, more specific and humane toxins, and so on, and we shouldn't undervalue such advances," Russell said.

"However, we could short-cut this long incremental process which might take decades to scale to New Zealand, with a game-changing technological breakthrough, which would might put nationwide eradication in reach within years." What needed to happen to make that a reality?

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**"We'll need every clever idea and every dollar of research investment," says Sir Rob Fenwick. Photo / Supplied/File**

It was entirely possible that one of the early objectives could be met through a more calculated approach to 1080 poison drops.

One partnership project dubbed Zero Invasive Predators had used this to obliterate all possums and rats across a 2300ha plot, and were this winter trying to replicate that success across 7500ha of South Westland bush.

But just as important as the science were the strategies built around it.

A new report commissioned by Predator Free New Zealand revealed a raft of problems facing conservation at grassroots level - namely that the impact of hundreds of volunteer groups wasn't being uniformly measured, nor being strategically funded.

That report's author, ecologist Dr Marie Brown, said "gappy" information about how our species and ecosystems were faring posed obvious headaches.

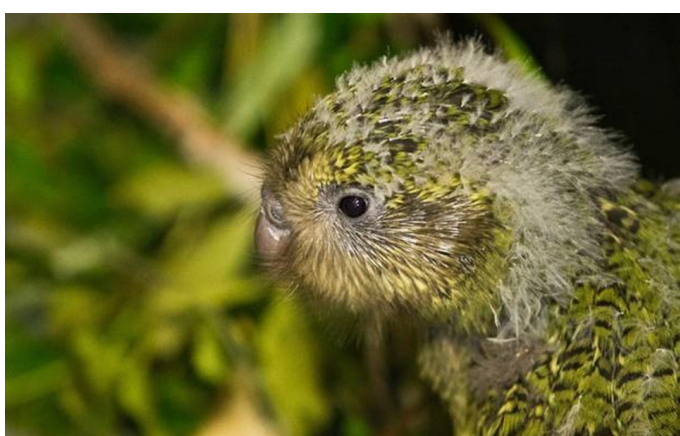
"I've already hinted at the need for better and more coherent collaboration between conservation players -

preferably articulated in a strategic plan that is outcomes-focused and funded," Brown said.

"In addition, clever prioritisation of resources is also necessary, as is greater monitoring of the outcomes of conservation activity whether by community or agency."

The 2050 vision was a big goal, so tracking progress would be essential to maintaining investment - and public interest. Sir Rob turned back to Callaghan's dream.

"He knew it wasn't possible without some breakthrough science. But he also knew the best incentive for deep pocket science investment is the dream of an outcome everyone buys into. He got this right."



**Kakapo are one of New Zealand's most endangered birds - but once thrived before humans and pest predators arrived in Aotearoa. Photo / File**

No one he'd spoken to believed a predator-free New Zealand was a bad idea. But it was a massive undertaking. A mountain-sized one.

"We'll need every clever idea and every dollar of research investment, whether it's a gene edit technology or a new Wi-Fi technology enabling remote monitoring of traps or multi-kill trapping devices," he said.

"This was always going to be a long game. I don't think anyone thought that on 31 December 2050 there'd be a ceremonial beheading of the last rat in New Zealand.

"But there is every reason to be optimistic that by that date, New Zealand's magnificent unique biodiversity will be more prolific and abundant than it is today.

"I doubt many countries that boast that outcome with much confidence."

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## Our war on pests

[https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=12061453](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=12061453)

**26 million:** a conservative estimate of the number of native birds slaughtered by pest predators each year.

**81 per cent:** the proportion of native birds now considered threatened. Among the most endangered are kakapo, Haast tokoeka kiwi, black robin and northern rock wren.

By: Jamie Morton

Science Reporter, NZ Herald

[jamie.morton@nzherald.co.nz](mailto:jamie.morton@nzherald.co.nz) @Jamienzherald

**\$9b:** the estimated cost of clearing pest predators from 26 million hectares of New Zealand mainland, using existing tools, over 30 years.

**45:** large-scale projects that have applied to Predator Free 2050 for funding, representing about 1.5 million hectares of mainland.



**61 per cent** of respondents in a nationwide survey were aware of New Zealand's goal to become predator free by 2050.



More than 80 per cent of New Zealand's native birds - including the kokako - are considered threatened. Photo / File



## 13TH FLOOR DEATH LEADS TO FLIES



In May of this year one of our members AJet Pro-store had a very unusual request thrown at them from one of their regular landlord customers; "Can you please deodorise an apartment where someone had died, and clear the apartment?"

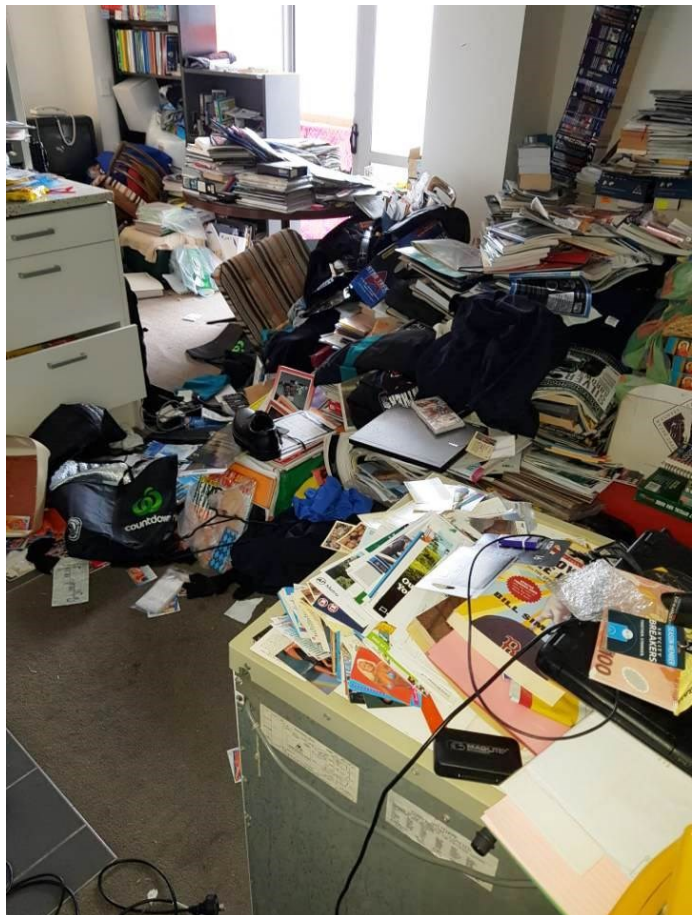
Not one to shy away from a challenge our member set about trying to ascertain what he could use as the person had been dead on the 13th floor of the apartment for over seven months! Yes, you read right over seven months.

He was an elderly gent that lived on his own with no family here to check on him. It was only when the electricity bill had not been paid for all this while that they sent a technician to disconnect the power, and found him dead and called the police.



According to our member the place stank badly, but surprisingly there were no flies around (as you would expect), but on opening the ranch sliders to the balcony, it was not long before the flies found their way up thirteen floors to come investigate the smell. It explains why it took so long before the body was discovered – the apartment was very well sealed.

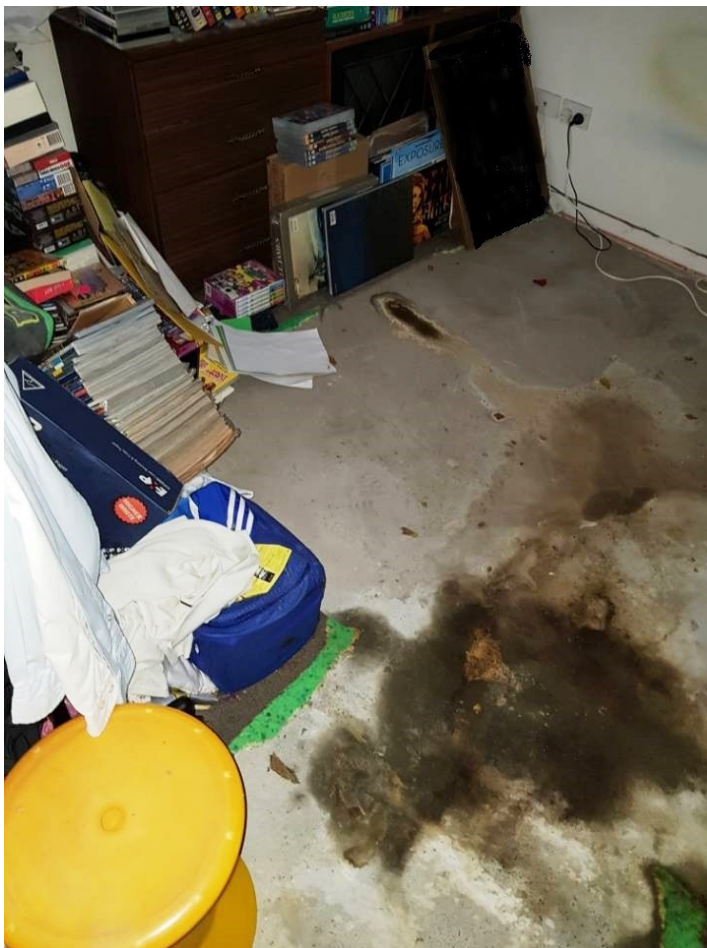
It took a huge resource of AJet's team over the next three weeks to declutter the whole apartment carefully, item by item, in an attempt to establish who he was and what was of value there. The stench was so ingrained that they had to strip back and remove all the soft furnishings like couches, bedding, curtains and carpets to rid the apartment of the smell.



The smell even penetrated the concrete floor where he had died. It had to be ground away and re-sealed to clean the smell from the body fluid that had leached through carpeting and into the concrete.

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The walls and ceilings were washed and painted. Thereafter Ajet used an hydroxyl generator and heat to rid the apartment of the odour molecules, which eventually they did. (hydroxyls attach to odour molecules similar to ozone except less dangerous than ozone and ten times more effective than ozone.)

The positive side to the story is that during the de-cluttering process they were able to locate his British passport and through a private investigator were able to contact his family to inform them of his death.

The takeaway from this story is - never ever underestimate the ability of a fly to track down a smell thirteen stories up in an apartment.

What a loathsome amazing insect!

### Where's the Carcass?

Blow and bottle flies (family Calliphoridae) and flesh flies (family Sarcophagidae) are similar to house flies. Such flies are attracted by garbage and food odours; most infestations originate from the exterior.

When dozens of these flies suddenly appear inside, it's a good bet that some animal has died within the walls, ceiling, attic, crawlspace or chimney.

The presence of blow flies inside a premises will usually lead to the discovery of a dead mouse, rat or bird.

In an experiment a dead mouse that had already been infested by blow fly larvae, was allowed to fully develop into flies within a container; 125 blow flies were the result. Imagine the number of flies produced from a larger animal.

Although the cause is easy to discern in these cases, finding an animal carcass within the voids of a structure can be quite difficult. Blow fly and flesh fly larvae crawl out of the breeding material to find a place to pupate and often the larvae can be found dropping from ceilings or crawling along baseboards. If larvae are found on top of a counter, bed, etc., look for vents or light fixtures in the ceiling from which larvae could have emerged. Either investigate the attic directly above or inspect the ceiling void, remove the vent cover or fixture, and examine the void for an animal carcass.



**Blow Fly**



**Flesh Fly**



# Technical Hints - Know your NZ cockroaches

(NZ Native)

*Parellipsidion conjunctum*

**Kingdom:** Animalia

**Phylum:** Arthropoda

**Class:** Insecta

**Order:** Blattodea

**Superfamily:** Blaberoidea

**Family:** Ectobiidae

**Genus:** *Parellipsidion*

**Species:** *Parellipsidion conjunctum*



Photo by Phil Bendle

*Parellipsidion conjunctum* is one of about 15 species of New Zealand native cockroaches. It is a small wingless cockroach, up to 15mm body length. It favours damp, dark habitats in logs and leaf litter or under loose bark. It is not a household pest.



Photo by Phil Bendle