



The Potential for Precision Pest Control using Drones (or UAV's, RPAS, UAS)

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The issue(s) – Ground control/ Trapping

- 2/3's of NZ's pest control is ground-based
- Is time-consuming
- Requires continual maintenance
- Have to cut and maintain tracks
- Hazardous and difficult terrain problematic
- People management is costly
- Lots of potential risks
- Coverage?
- Mostly near urban or larger populated areas



The Issues - Aerial

- Helicopters are expensive
- Used for larger (remote) areas
- Not cost-effective to hover
- Helicopters not available in some locations
- 1080 is controversial
- Exact location of bait is unknown
- Still requires large buffer zone



Why use a drone? Also called: UAV, UAS or RPAS

- Fast, quick, and portable
- Accurate and precise
- Avoid sensitive areas
- Save time, reduce labour costs
- Can fly over hazardous difficult terrain
- Provides a total management system
- We can record where the baits have landed
- Can carry traps/equipment



Morley et al., 2017. Rethinking Ecology, 2, 27-39.
doi: [10.3897/rethinkingecology.2.14821](https://doi.org/10.3897/rethinkingecology.2.14821)

What can our system do?

- Targeted precision¹
- Fly to pre-programme coordinates
- Deploy baits in multiple configurations
- Deploy a range of toxins
- Attract new people into industry
- Operate sustainably



1. Precision = “The delivery of customised baits in any terrain to <1 m radius of target. We can confidently deliver baits to within a metre of streams, rivers, lakes, reservoirs, archaeological sites, and neighbouring boundaries ensuring certainty of coverage and protection from environmental risk”

What we are not proposing to do

- Use recreational drones
- Carry large volumes of toxin
- Fly for long periods of time
- Control sites already under control
- Control really large areas >200 ha
- Replicate or miniaturise current systems
- Fly beyond visual line of sight (BVLOS)
- Fly Part 101 (Only use certified Part 102 pilot's)



What we are proposing to do

- Control pests in small areas
- Control pests in areas receiving little or no pest control
- Increase the amount of area under pest control
- Substantially lower the cost of pest control
- Substantially lower the risks of pest control
- Use an alternative to 1080
- Involve a high level of technology (AI, object recognition)
- Use a highly developed cloud database
- Gather additional IR, MSI and optical imagery



Our technology

- Deployment unit already built and tested¹
- Can attach to an “off-the-self” commercial drone
- Can use fixed wing (VTOL) aircraft or multi-rotor
- Can launch/land from sea vessels
- Micro-sensors can be placed on baits
- Baits deployed in multiple configurations
- Baits can lodge in trees, thus, targeting 3rd dimension
- Can launch, fly, deliver baits to target and, land autonomously
- Make all information available via the cloud database to anywhere in the world



THANK YOU!

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