

DOC Current Agreed Best Practice for Pest Control

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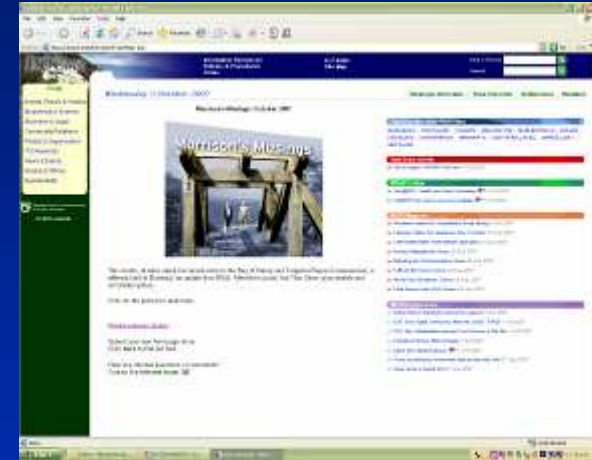
Department of Conservation
Te Papa Atawhai



Photo: J. Mason

Background

- Electronic online manual
 - to assist staff design pest control projects
 - not about hands on field skills
 - sits within PAM framework
- Intranet vs. Internet
- DOC RD&I Threats Improvement
 - Hamilton technical support team



What pests covered so far?

- Rats — control †
- Stoats †
- Ferrets †
- Feral cats †
- Rats — eradication
- Thar
- Pest fish
- Possums — in progress
- Goats — in progress
- Deer — to be started
- Pigs — to be started

† = I can talk about these

What is Current Agreed Best Practice?

- Current
 - up to date
 - reviewed ~ 18months
 - staff can access latest knowledge
 - staff don't have to 'reinvent the wheel'
 - staff can contribute own ideas
 - learn from past mistakes



Photo: R. Henderson



Photo: W. Williamson

What is Current Agreed Best Practice? cont...

- Agreed
 - network group for each pest species
 - comprising experienced staff from across the Department
 - evaluate techniques, consider new developments and agree on what are the best options



Photo: Courtesy D. Peters



Photo: Courtesy D. Peters

New Information

Science

Trials

Operational
Reports

Anecdotal
Observations

Standards
(SOP's, legislation)

Change suggested

Discussed by Network Group

More information
required

Best option chosen

Discard new
information if not
best practice

Change made if new
information is best practice

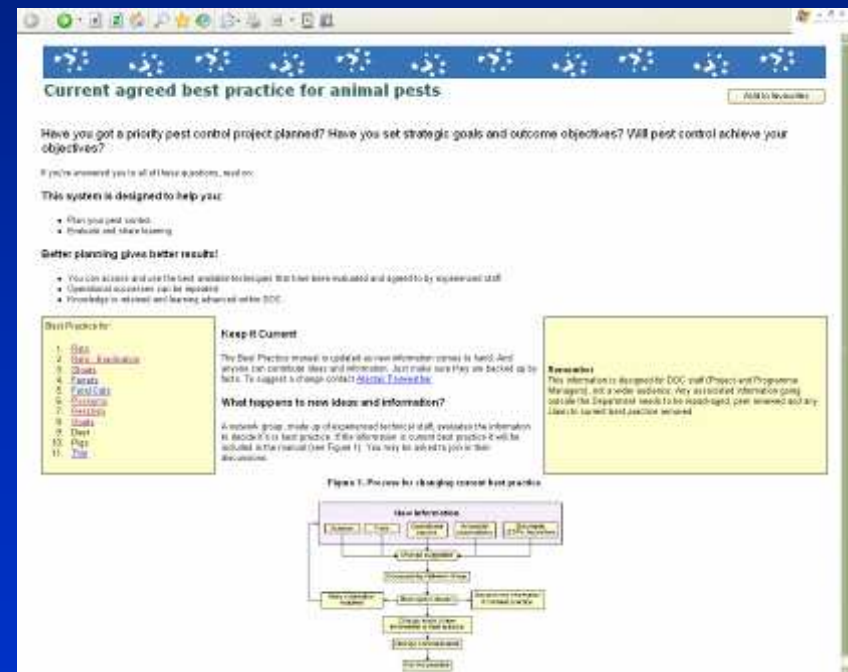
Change communicated

Put into best practice

Photo: courtesy www.predatortraps.com

So How Does it Work?

- Evaluation of Techniques
 - what technique to use?
- Operational Planning and Design Considerations
 - the ‘recipe’ for using a particular technique
- Network Groups
 - a list of who is on the group



Evaluation of Techniques

RATS



Evaluation of Techniques

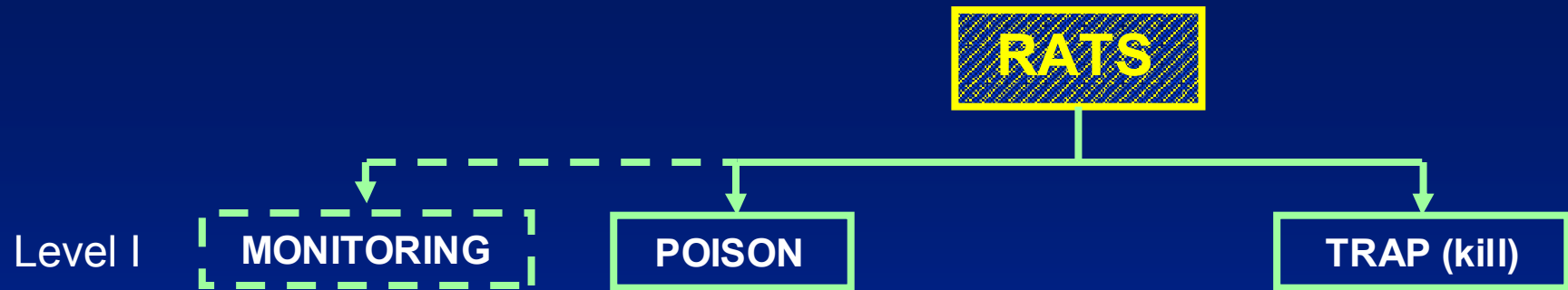
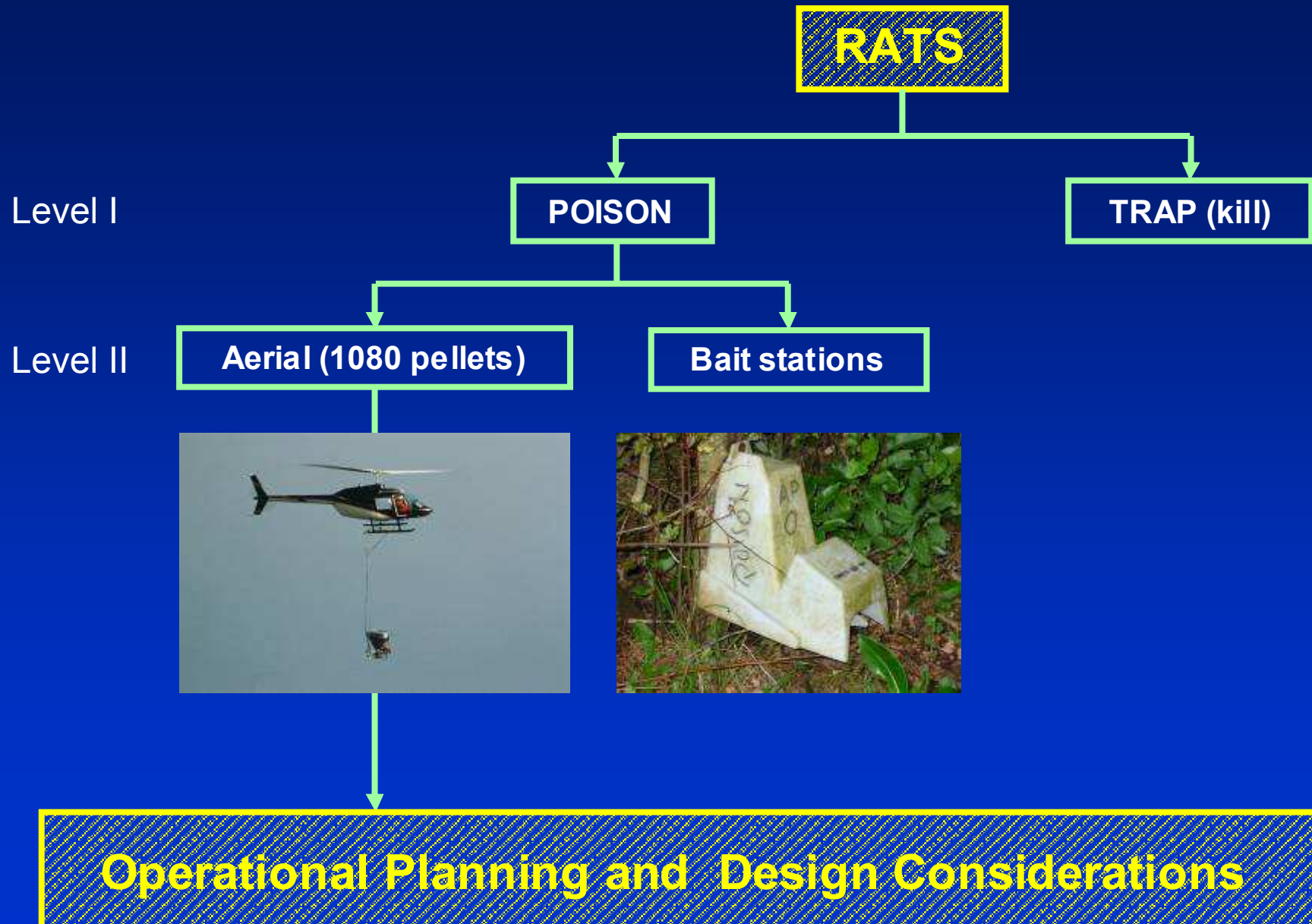


Photo: B. Bevan

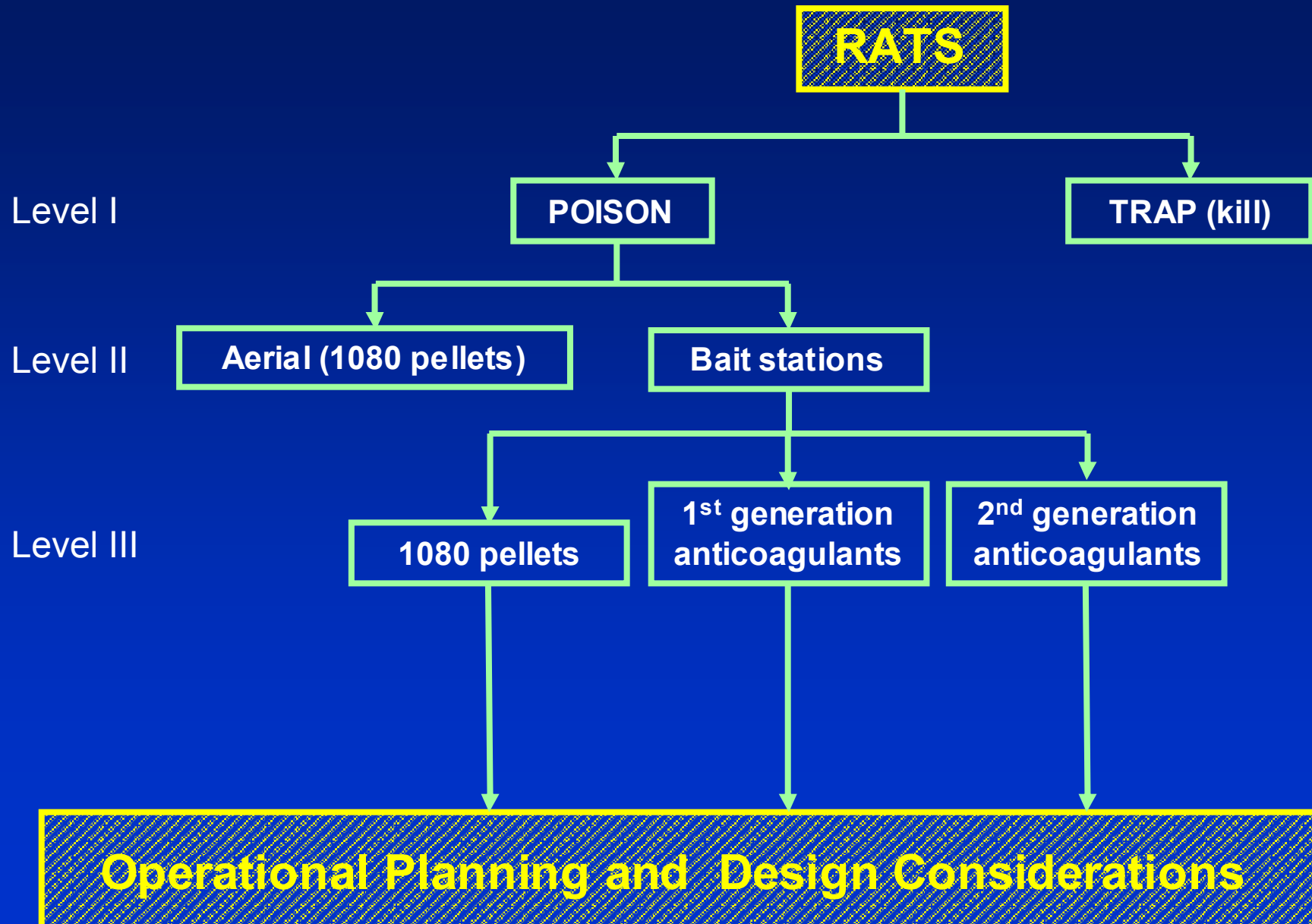
Evaluation of Techniques



Evaluation of Techniques

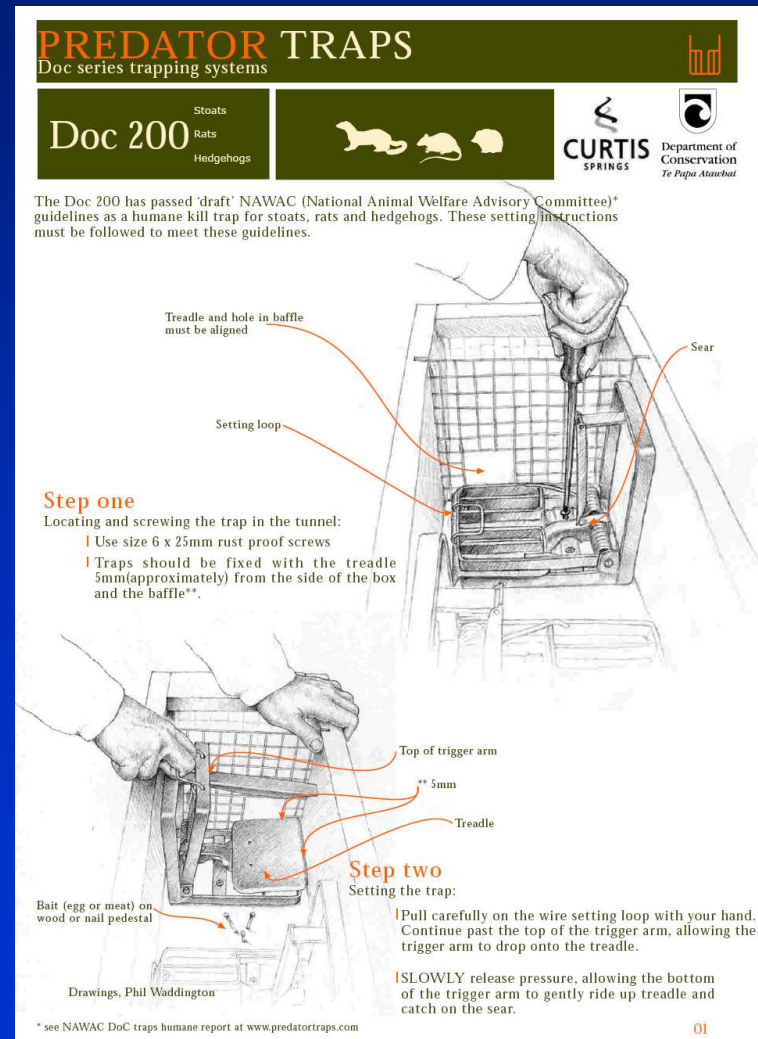


Evaluation of Techniques



Operational Planning and Design Considerations

- Technique
 - device layout, timing, effective use
- Equipment
 - recommended devices, maintenance
- Skills required
- Standards
 - Health and safety, animal welfare
 - DOC SOP's



Operational Planning and Design Considerations cont...

- Sustaining control over the long term
- Limitations
- Information
 - DOC contacts
 - recommended reading
- Under development
- References

RAT CONTROL – 1ST GENERATION ANTI-COAGULANTS IN BAIT STATIONS

TECHNIQUE

Bait station placement

- No greater than 100 x 150m apart in forest habitats. Closer where mice are also being targeted. There should be at least one bait station within each rat's home range. Home ranges are generally reported by length. Ship rats have an average range length of 100-200m during the breeding season. Non-breeding ship rats have larger home ranges. Norway rat home ranges are between 218-916m in length [1].
- Laid out on grids by compass bearing or, in rough terrain, placed on ridges and spurs with additional lines located on 100 m contours using an altimeter. Spacing should be established as precisely as possible using compass and hip chain. Inaccurate location of lines will cause gaps in coverage where pockets of high rat numbers can persist.
- A good track infrastructure is important and each bait station numbered for ease of relocation and data collection. Reduces the risk of missing bait stations during checking and allows data collected to be related to bait stations.
- Bait stations should be attached to the dry side of trees and posts with the opening 25-30 cm above the ground. This optimises their use by rats and avoids rain and water splashing off the ground affecting bait quality.

Timing of operations

- Timing is critical and depends on what is being protected. For ecosystem management, timing should be related to rat tracking indices. For species protection, timing is dependant on when the species being protected is most vulnerable. Eg. To protect robins during the breeding season, rat indices must be low while the robins are on the nest until the chicks fledge. To protect invertebrates and skinks, rats should be controlled year round [1].

Effective use of 1st generation anticoagulants

- An excess of bait needs to be placed in the bait stations and once rats start feeding on the bait, the bait stations regularly refilled to ensure they are never empty. First generation anticoagulants are a multiple feed toxin. Rats must feed on the toxin for at least 5 consecutive days to ensure they receive a lethal dose.
- Assuming rat numbers are high during the initial control, bait consumption will be high and gradually reduce as rat numbers decline.
- At the end of the operation uneaten bait must be collected and removed from operational area. This reduces the chance of rats being exposed to poor quality bait (old) and the time toxin is in the environment.

EQUIPMENT

Bait stations

Key elements are: allow rats easy access, limits access by non-targets, protects bait from the elements, limits bait spillage, doesn't get blockages, holds up to 1.5 kg of bait, easy to fill (and transport when establishing the network), be durable and designed for easy attachment.

- An example of one that fits the criteria is the large ~~Philproff~~ bait station.

Bait

- Only freshly manufactured bait should be used. Bait that has previously been in the field must not be reused. This ensures high bait palatability, which has a direct influence on success. Old baits are likely to have mould growth and be less palatable.

Feral Cats

POISON

SHOOTING

TRAPPING

Level I



Poison – feral cats

- **What:**
 - Fish-meal based 0.10% 1080 Feral Cat Bait
- **When/where:**
 - only when other options unsuitable
- **Good because:**
 - relatively low labour costs
- **But:**
 - questions about efficacy
 - best practice not developed
 - do a field trial



Photo: G. Lind

Feral Cats

POISON

SHOOTING

TRAPPING

Level I



Shooting – feral cats

- **What:**
 - firearm
 - opportunistic hunting
- **When/where:**
 - not a standalone technique
- **Good because:**
 - active (as opposed to passive)
- **But:**
 - ineffective except in particular situations
 - no best practice is available



Photo: C. Rudge

Feral Cats

POISON

SHOOTING

TRAPPING

Kill trapping

Leg-hold trapping

Cage trapping



Photo courtesy N. Poutu and B. Warburton



Photo: G. Harper



Photo: P. Graham

Kill trapping – feral cats

- **What:**
 - a device triggered when the cat touches a bait
 - kill instantly (NAWAC std.)
- **When/where:**
 - wide application in NZ
- **Good because:**
 - don't have to be checked daily
 - considered humane
- **But:**
 - no proven long life bait
 - operational efficacy unproven
 - passive



Photo: B. McKinlay

Feral Cats

Level I

POISON

SHOOTING

TRAPPING

Level II

Kill trapping

Leg-hold trapping

Cage trapping

Operational Planning and Design Considerations

FERAL CATS - KILL TRAPING

TECHNIQUE

Trap station layout

Successful population control in areas where cats are abundant (see below) requires an extensive trap layout. Set traps 100-200 meters apart along linear landscape features (fence lines, fence edges, roads, utility tracks and so on) and installed parallel against a single house margin, and in areas with high prey abundance.

Use the following guidelines to set *live* bait traps for *live* house traps. They have long (0.5-2.0) m traps, often use conspecifics, and/or *live* bait traps. *1* Domestic *live* trap cats, where measured, range from 0.15 cat/m² to 0.17 cat/m². *2* *Live* traps are more likely to be used in areas with high prey (e.g. island feline, *feral* and/or *high* prey abundance).

- Look for fraps from heating additional traps or consider moving those traps that are not catching animals.
- *Individual* cat *trap* *potential* *varies* *and* *the* *area* *they* *can* *be* *arrested* *is* *very* *specific*.
- *Use* *the* *trap* *to* *kill* *the* *cat* *on* *site*.
- *In* *areas* *of* *large* *vegetation*, *consider* *cutting* *down* *traps* *at* *90* *degrees*.
- *Trucks* *are* *often* *utilized* *to* *move* *traps* *to* *new* *locations*.
- *Supplementary* *trapping* *around* *farm* *buildings*, *off* *trap* *and* *rabbit* *dumps* *may* *help* *reduce* *the* *cat* *population* *and* *slow* *reproduction*.
- *The* *large* *house* *range* *of* *cat* *means* *these* *animals* *may* *be* *the* *same* *ones* *entering* *conservation* *areas*.
- *A* *good* *trap* *infrastructure* *is* *important*, *and* *each* *trap* *station* *numbered* *for* *easy* *of* *relocation* *and* *direction*.
- *Reduce* *the* *risk* *of* *missing* *a* *trap* *during* *checking* *and* *allow* *each* *trap* *to* *be* *related* *to* *each* *trap* *station*.

Timing of operations

- *Timing* *is* *critical* *and* *it* *depends* *on* *the* *species* *being* *protected*, *and* *the* *biology* *of* *cats* *and* *their* *prey* *at* *each* *year*.
- *E.g.* *To* *protect* *prey* *such* *as* *krum* *and* *white*, *do* *not* *trap*, *but* *trap* *is* *it* *is* *necessary* *to* *control* *the* *cat* *population*.
- *To* *protect* *young* *prey* *predators*, *cat* *control* *should* *occur* *before* *1* *month* *and* *during* *the* *predator* *1* *month*.
- *Many* *traps* *are* *used* *to* *kill* *the* *cat* *on* *site*.
- *It* *may* *be* *more* *easy* *to* *trap* *during* *the* *season* *of* *maximum* *predator* *1* *month*.

Effective use of bait traps

Trap-checking regime needs to consider:

- Trap occupancy rate of only traps and non-trap traps
- Pad life of the bait used
- Frequency of inspection required (vary from weekly (or more frequently) during high cat numbers, to monthly in winter with low cat numbers) and when not present. Localized site protection inspections may need to be placed on a more frequent basis (e.g. daily).

EQUIPMENT

Key equipment are cashless entry, kill humanely, easy to use and maintain, in light weight, portable and durable.

- *Steve* *Allen* *(CA)* *cashless* *entry* *system*, *the* *Bell* *Super* *K20* *in* *a* *cubby* *or* *a* *chamber* *system*, *and* *the* *trap* *are* *very* *easy* *to* *use* *and* *maintain*.
- *Steve* *Allen* *(CA)* *cashless* *entry* *system* *that* *have* *passed* *the* *National* *Animal* *Welfare* *Directorate* *(NAWFD)* *guidelines* *for* *animal* *care* *and* *the* *trap* *are* *very* *easy* *to* *use* *and* *maintain*.
- *The* *Steve* *Allen* *(CA)* *cashless* *entry* *system* *includes* *a* *learning* *board* *and* *metal* *bracket* *to* *set* *the* *trap*.
- *The* *trap* *is* *the* *system* *used* *to* *kill* *the* *cat* *on* *site*.
- *The* *Bell* *Super* *K20* *trap* *must* *be* *set* *with* *a* *chamber* *trap* *cage* *or* *cubby*.
- *The* *trap* *is* *the* *system* *used* *to* *kill* *the* *cat* *on* *site*.

Further information on traps and specific capture for the sets are located at:

- [ukdms-2248](#) (Bell Super K20 and chamber trap)
- [ukdms-2248](#) (Steve Allen (CA) chamber and cubby sets)

DEPARTMENT OF CONSERVATION
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BARBIDOS
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ANIMAL TEST BEST PRACTICE
VERSION 2.0

PREDATOR TRAPS

Doc series trapping systems

Current Best Practice
Feral Cat Kill Trapping System 2

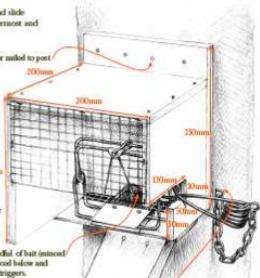



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Te Pūke Aotearoa

The Stone Alpha (SA) combuser trap set in a 'cubby'.

Step one:
Construct and attach cubby with permanent mount to tree or post.

Step two:
Place bait onto mount, set trap and slide into mount with trap trigger upposition and outwards as shown in diagram.



Drawings Phil Viddings
Original design, Justin Macnicola

Image : P. Waddington & DOC

Operational Planning and Design Considerations – feral cats

- Technique
 - trap station layout
 - timing of operations
 - effective use of kill traps
- Equipment
 - recommended devices
 - maintenance
 - baits and lures



Belisle Super X 220



**Steve Allan
modified Conibear**



Timms Trap

Operational Planning and Design Considerations cont...

- Skills required
 - knowledge of cat ecology & behaviour
 - dedicated trapper
- Standards
 - animal welfare (NAWAC)
 - Health and safety
 - DOC SOP's



Operational Planning and Design Considerations cont...

- Sustaining control over the long term
 - monitor conservation outcomes
 - combine techniques
 - data quality
- Limitations
 - non-target interference
 - risks to domestic cats
- Information
 - recommended reading
 - DOC contacts



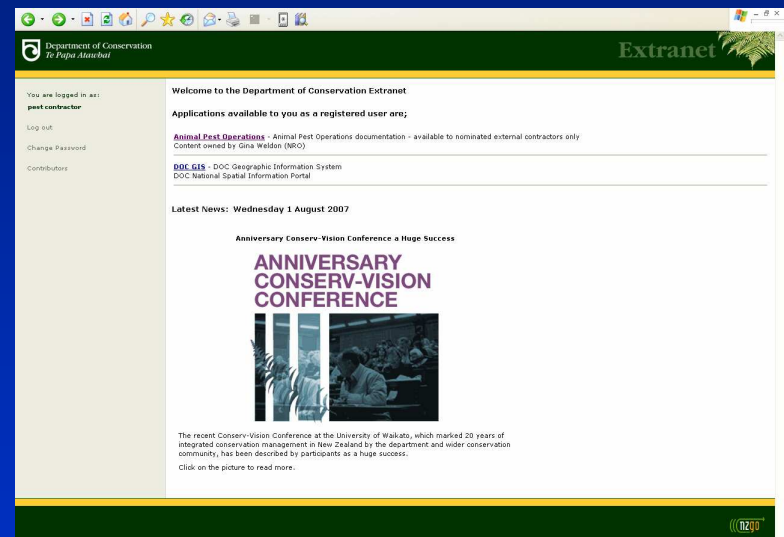
Photo: R. Morris

So is this stuff actually available outside of DOC?

- YES – but
- Still in development for internal audience
- Will go on the DOC website in due course
 - April 2008 project start
 - will be targeted at non-DOC audience
 - will be combined with ‘Animal Pest Fact Sheets’
 - a lot of work to be done to get it to that stage
- In the meantime just ask

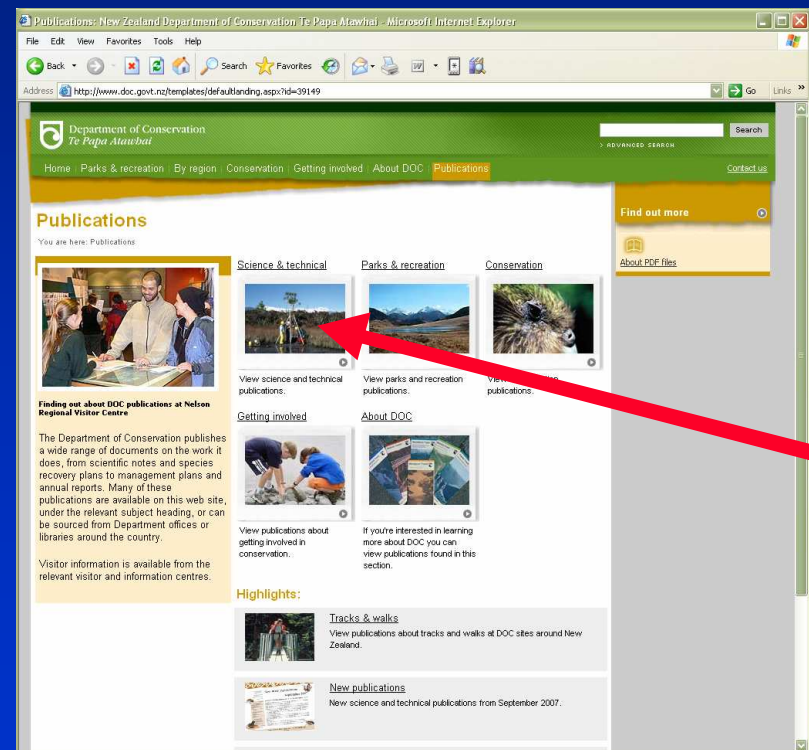
What other things are actually available?

- Extranet
 - window into the intranet
 - <http://extranet.doc.govt.nz/>
- Status list
- SOP's
- HSNO compliant warning signs
- Pesticide Information Reviews



What other things are actually available? cont...

- DOC publications
 - www.doc.govt.nz
 - Science & technical
- Peer reviewed papers
 - RD&I Internal Series
 - Science for Conservation
 - Science posters



What other things are actually available? cont...

- Biodiversity Training
- Animal Pest Operations
 - 3 day course
 - 26 November 2007
- FREE (for the moment)
 - “Approved Handler Certificate” required



Summary

- DOC current agreed best practice for controlling pest mammals
 - it is a work in progress
 - designed to help staff choose the best technique
 - electronic manual on the DOC Intranet
 - is available outside of DOC
 - just need to ask the right person
- There are other resources available too
 - just need to know where to look

