Trap testing: standards and guidelines

Bruce Warburton

Manaaki Whenua-Landcare Research

Content

- ISO and the history of trap standards

- New Zealand's trap testing guidelines

- Testing process and recent results

- Issues for discussion

ISO standards ...1

- Technical Committee 191 first met in1987

- Canada provided chairmanship and secretariat

- Initially 7 countries involved then grew to 15

- Driven by the fur trade, but included all trapping

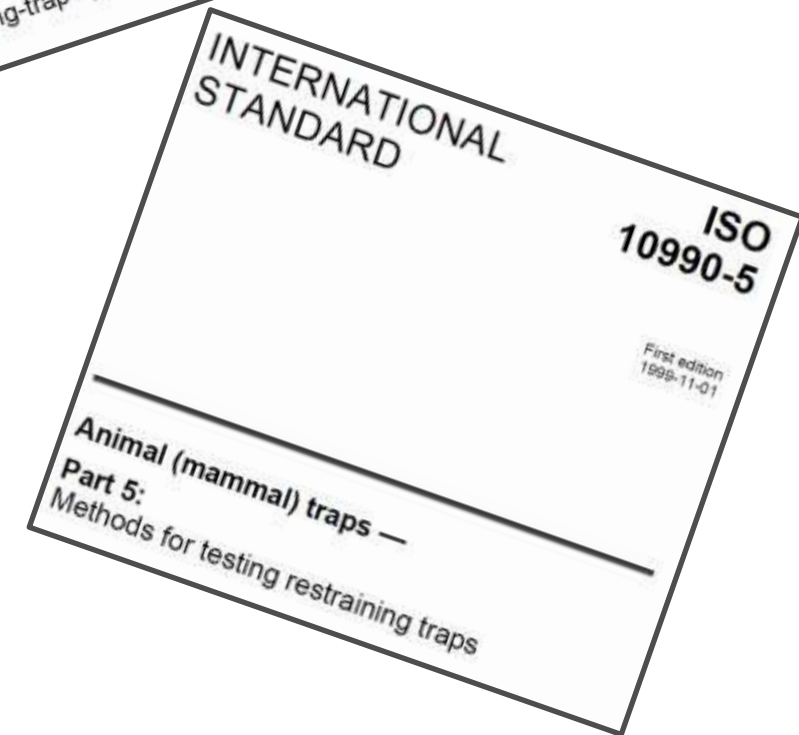- Included kill and restraining traps

Kill traps

Restraining traps

ISO standards …2

- For most of 10 years a 3min time to irreversible unconsciousness was accepted

- With additional countries, could not get agreement on a time to unconsciousness

- Standard became a testing standard with no welfare thresholds included – agreement reached in 1997

- Thresholds could be set by individual countries

INTERNATIONAL STANDARD

ISO 10990-4

First edition 1999-11-01

Animal (mammal) traps —

Part 4:
Methods for testing killing-trap systems used on land or underwater

INTERNATIONAL STANDARD

ISO 10990-5

First edition 1999-11-01

Animal (mammal) traps —

Part 5:
Methods for testing restraining traps

Agreement on International Humane Trapping Standards

- Tripartite agreement between EU, Canada, and Russian Federation. The USA signed a similar but separate agreement with the EU.

- Furs could be imported into the EU if "there are adequate administrative or legislative provisions in force to prohibit the use of the leghold trap; OR – the trapping methods used for the species listed in Annex I meet internationally agreed humane trapping standards."

AIHTS times to unconsciousness

3.3. Indicators and time limits

Time limit to loss of corneal and palpebral reflexes	Species
45 seconds	*Mustela erminea*
120 seconds	*Martes americana* *Martes zibellina* *Martes martes*
300 seconds (¹)	All other species set out in paragraph 4.1.

New Zealand trap-testing guidelines

- Based on the ISO standard

- National Animal Welfare Advisory Committee guideline

- Includes killing and restraining traps

NAWAC GUIDELINE 09:
Assessing the welfare performance of restraining and kill traps

1. Introduction

The purposes of this guideline are to:

(a) standardise the testing of welfare performance of traps;

(b) encourage the continuing development of new and existing traps to improve the effectiveness of kill traps and the welfare of animals caught in restraining traps, including the reduction of injuries and minimisation of suffering;

Note: This guideline focuses on the assessment of the welfare performance of traps NOT on how effectively the traps capture target animals or how target-selective, mechanically robust or user safe they are.

2. Scope

This guideline applies to all types of traps designed to restrain or kill animals. This guideline confines the measurement of animal welfare associated with the use of traps to physical trauma, and does not include psychological and physiological distress. This is because insufficient information exists on what physiological parameters to measure and, for any one parameter, what levels could be considered as the minimum.

https://www.mpi.govt.nz/mpisearch#stq=guideline+09&stp=1

Trap-testing guidelines

- It has A & B classes

- For kill traps:

  - Class A = 30 sec

  - Class B = 3 min

- Minimum sample size is 10

- 10 of 10 animals must be rendered irreversibly unconscious

Appendix D: (b) Specification for Acceptable Killing Effectiveness of Class B Kill Traps

For example, from a sample of 20 animals there must be no more than three retaining their corneal reflexes after three minutes and no more than one retaining its corneal reflex after five minutes.

Note: This table is designed to give 90 per cent confidence that traps that pass the test will perform below the lower threshold 70 per cent of the time and below the upper threshold 80 per cent of the time.

Maximum allowable number of animals retaining corneal reflexes after 3 and 5 minutes

Number of animals	3 minutes	5 minutes
10	0	0
15	2	0
20	3	1
25	4	2
30	5	2
35	6	3
40	7	4
45	9	5
50	10	5

Trap-testing guidelines

Also includes guidelines for testing capture efficiency and target selectivity

Appendix E: Guidelines for Assessing Capture Efficiency, Target Selectivity, Mechanical Robustness and User Safety

1. Capture efficiency

The capture efficiency of a new or modified trap is assessed by comparing the number of captures it achieves per 100 trap-nights with the number of captures achieved using a "control" trap.

2. Target selectivity

Selectivity will vary from site to site because of varying distribution and abundance of non-target animals. However, when assessing capture efficiency in the field, recording the capture of target and non-target animals will provide some information on the trap's selectivity. For species such as kiwi and weka, specific field trials may be required to test the risk that a trap might pose to these species.

Kill trap testing

- 89 trap tests including 22 rodent tests

- 37 tests passed the guideline
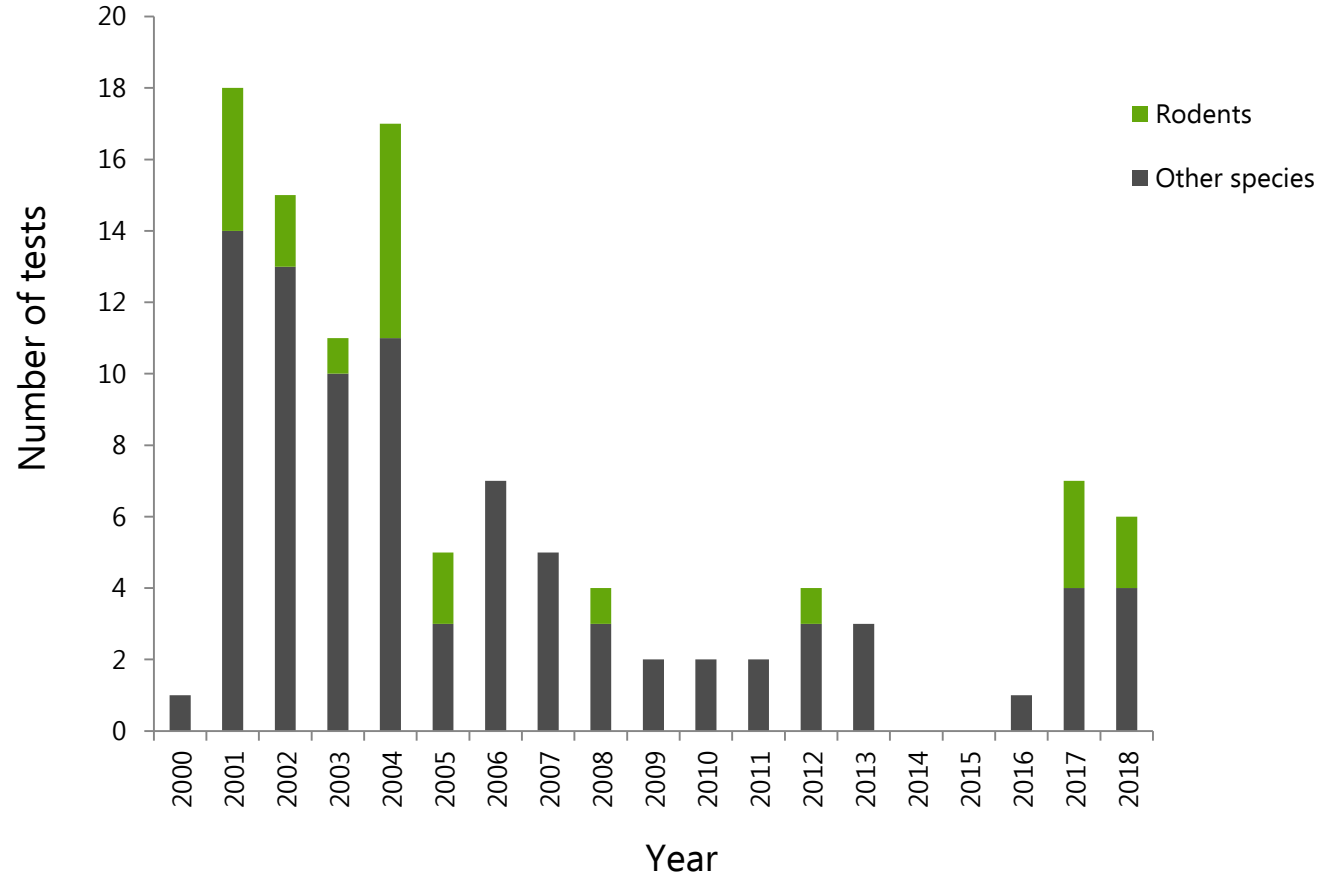
Pen trials

- Live capture target animals and acclimatise them to captivity

- Individually house animals in testing arenas or pens

- Set up traps and video cameras

- Sit in the dark with thumb poised over stopwatch (it cannot be done remotely)
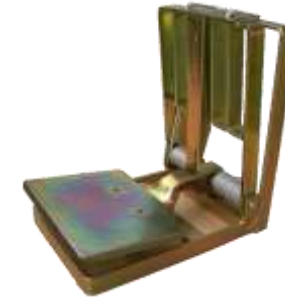
- Rat tests costs c. €7,000

Rat traps that have passed the guideline

No tests have been done with mice

	Norway rat	Ship rat
DOC150	√	
DOC200	√	
DOC250	√	√
Victor Professional with shroud	√	
Nooski	√	
Modified Victor Professional		√
Goodnature A24		√
Modified Snap-E in PF tunnel		√
T-Rex/Tomcat in PF tunnel		√

Ship rats vs Norway rats

- Ship rats average wt = 120g

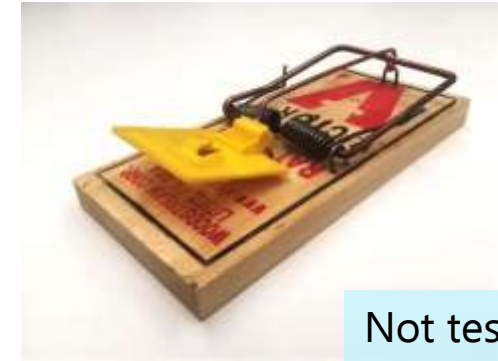- Norway rats average wt = 300g

Note: tape on trap to cover hole for observing blinking response

Victor professional snap-back trap

- Orientation of the animal when struck is critical for killing performance

- Test must include the set (tunnel/shroud) and baiting!!!

Not tested

Tested & passed on Norway rats

Tested & passed on ship rats & stoats

Traps and tunnels

- T-Rex rat trap failed in commercially supplied and recommended tunnels (side approach)

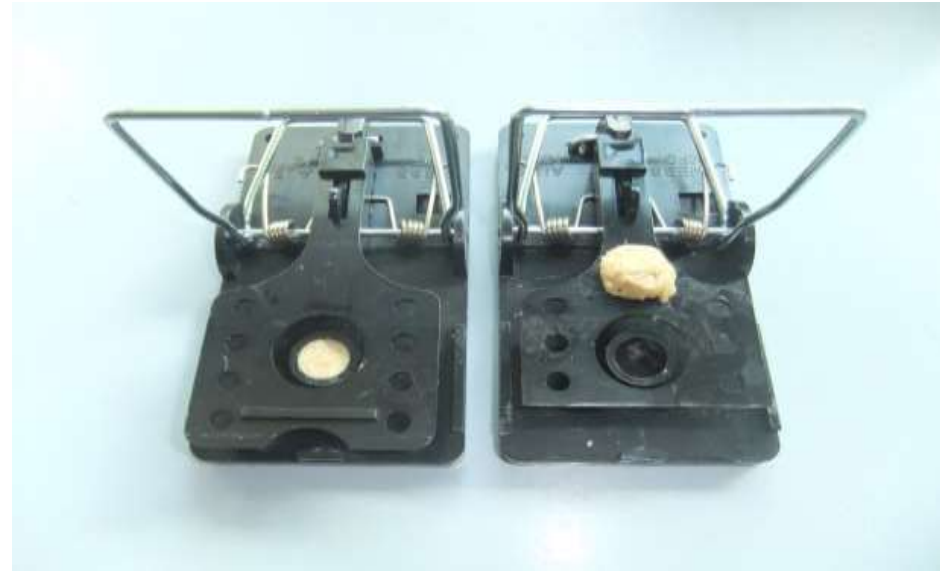- Passed in a wooden PFNZ tunnel (front approach)
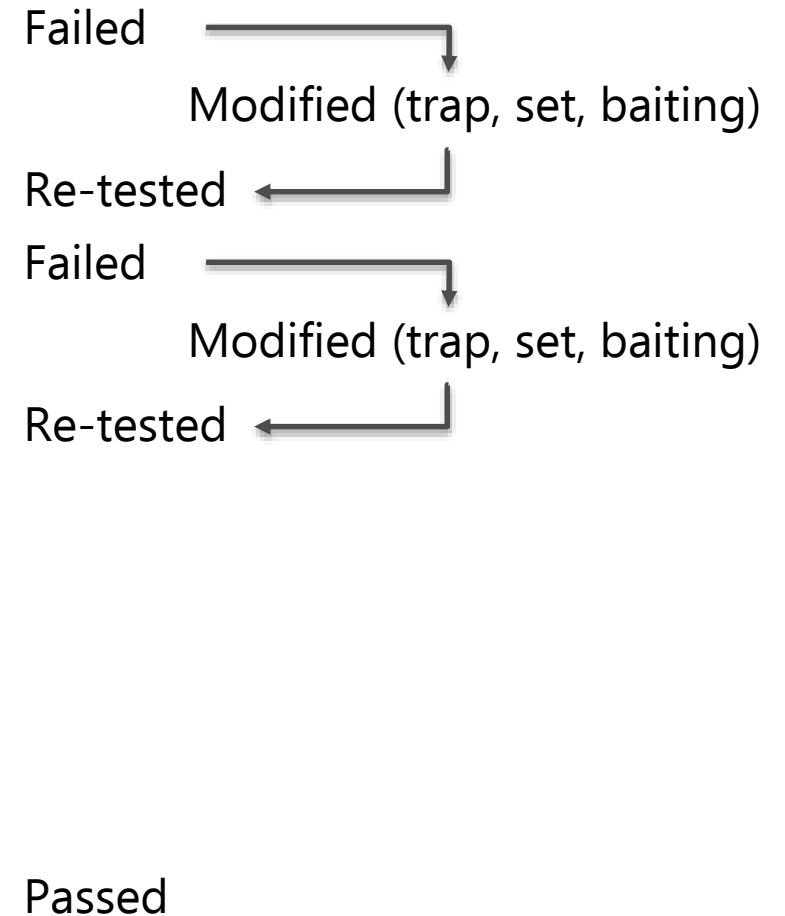

Failed

Failed

Passed

Baiting

Bait positioning is critical for ensuring effective strike location

10 out of 10 – the process

Date	Weight (g)	Sex	Loss of palpebral reflex (min:s)	Heart stop (min:s)	Strike location
Test 1					
2/05/2017	98.4	F	-	-	Rear right leg and tail
Test 2					
31/05/2017	181.1	M	<57 s	2 min 30 s	Between ears & eyes
1/06/2017	150.1	M	-	-	Tip of nose
Test 3					
4/07/2017	86.0	F	1 min 24 s	2 min 43 s	Neck
4/07/2017	143.5	F	1 min 7 s	2 min 39 s	Chest
5/07/2017	111.3	F	<38 s	<1 min 53 s	Chest
5/07/2017	127.0	F	<27 s	4 min 20 s	Neck
7/07/2017	117.7	F	1 min 56 s	3 min 27 s	Neck
7/07/2017	122.0	F	<32 s	3 min 7 s	Neck
9/07/2017	134.3	F	<57 s	3 min 15 s	Across eyes
9/07/2017	116.6	F	<35 s	2 min 36 s	Between ears & eyes
11/07/2017	188.6	M	1 min 20 s	3 min	Chest/rear of diaphragm
11/07/2017	167.6	M	<47 s	2 min 6 s	Chest

Failed →

Modified (trap, set, baiting)

Re-tested ←

Failed →

Modified (trap, set, baiting)

Re-tested ←

Passed

Trap copies – Are they the same?

Graham's rat trap

T-Rex/Tomcat rat trap

Hippo rat trap

Issues/discussion points...1

- Tests must include the set and baiting

- What time-to-unconsciousness is acceptable?

- Can copies be mechanically tested or just assumed to meet the standards

  - Fairness: commercial issue as someone has paid for testing and copies piggy-back on this

  - Benefit for animals if less are used for testing (if only do mechanical test)

- Trap modifications (minor) – does a trap need to be re-tested?

Issues/discussion points...2

- Used traps – does spring power decline? Should traps be sprung 50+ times before testing?

- Animal size – how to test for a range of weights (representative sample or pick animals hardest to kill?)

- Sample size and statistic power

- Capture efficiency – significant additional cost

Consolidated pest management resources

Best practice, operating procedures and templates from across the biosecurity system

Connecting pest information across the biosecurity system

A13 Responsible Use of Bait Stations: An Operators' Guide. (PDF 4.1 MB)

Guidance on the use of toxic bait stations for vertebrate pest control, including legal obligations, risk management, field techniques, recording and reporting.

A4.2 Kill Traps: A Guideline to Trap Possums, Ferrets, Stoats and Feral Cats using Kill Traps (PDF 7.8 MB)

This guideline describes the use of kill traps for capturing possums, ferrets, stoats and feral cats.

Department of
Conservation
Te Papa Atawhai

Parks & recreation   Nature   Get involved   Our work

Toolkit: Predator Free 2050

Get the tools and guidance you need for your community PF2050 project. Includes beginner tips, trap and bait profiles, how-tos and funding resources.

This toolkit will be most useful for community groups working in green spaces, rather than urban areas or backyards.

- Backyard trapping? You'll find simple advice in our backyard trapping section.

Trapping and poisoning

Choose traps or toxins to suit your circumstances, or borrow from a trap library.

Consider the following factors and advice when choosing, purchasing and using traps and toxins for your Predator Free 2050 project.

Site-specific factors

Consider your site's characteristics to determine which pest-control method will get you to your goal efficiently and safely.

Choose traps and toxins

Find the most suitable pest control tools for your Predator Free 2050 protection area.

Where to put trap and bait lines

Learn how to put at least one trap or bait within each target predator's home range. Accuracy is key.