FERRET CONTROL

Standard Operating Procedures

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Save the kiwi

BACKBLOCKS
ENVIRONMENTAL MANAGEMENT LTD

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Contents

Overview

Ferret control through trapping is essential for protecting native wildlife. Ferrets (*Mustela furo*), introduced to New Zealand in the 19th century, have become a significant threat to native bird species and reptiles. They predate on eggs, chicks, and adult birds, leading to declines in native populations. Their control is necessary to restore and preserve New Zealand's biodiversity and to protect agricultural interests.

This Standard Operating Procedure (SOP) provides a basic framework for the effective trapping of ferrets, incorporating scientific research, practical field experience, and established best practices. For greater detail and more in-depth prescriptions, the reader is encouraged to also read the Save the Kiwi *Ferret Trapper's Guidelines* that works alongside this document.

This SOP outlines methodologies for trap station layout, equipment selection and maintenance, and the use of various trapping techniques including kill trapping, cage trapping, and trail camera monitoring. The aim is to maximise trapping efficiency, ensure humane practices, and maintain effective ferret control in both conservation and agricultural settings.

Key elements of this SOP include:

- **Trap station layout:** Detailed instructions for placing traps in high-probability locations based on ferret behaviour and habitat features. Proper layout design ensures extensive coverage and maximises trap encounter rates.
- **Effective use of kill traps:** Guidelines for the permanent deployment and regular inspection of kill traps, including timing and maintenance protocols to optimise their effectiveness.
- **Additional trapping methods:** Recommendations for supplementary techniques such as cage trapping for individuals that avoid kill traps, and the use of trail cameras for monitoring ferret presence and refining trapping strategies.
- **Equipment specifications:** Criteria for selecting traps and lures, ensuring they meet standards for efficacy, humane killing, and safety for non-target species.
- **Maintenance and data collection:** Emphasis on regular maintenance, cleaning, and inspection of traps to maintain their functionality and effectiveness. Consistent data collection is essential for evaluating the success of trapping efforts and adjusting strategies as needed.

By following this SOP, practitioners can implement a systematic and effective approach to ferret control, and thereby increasing kiwi population numbers in your project. The procedures are designed to be adaptable to various environments, ensuring that trapping efforts are both efficient and sustainable.

Techniques

Trap station layout

1. General layout considerations

- *Extensive coverage*: Standard grid networks with trap lines 800m–1000m apart have been shown to be effective for stoats, however for ferrets additional effort is needed to add traps to landscape features that ferrets are known to prefer. Trail camera or infill trapping field trials completed by the lead author frequently detect missed animals. Effective ferret control requires a comprehensive trapping network with meticulous trap placement. Ferrets have specific movement patterns, so placing traps along their known travel routes greatly improves catch rates.
- *Micro placement*: Traps should be placed considering ferrets' movement patterns within their habitat. Placement should consider potential travel routes down to the metre level.

2. Optimal trap locations

- Areas with high prey abundance (e.g., rabbit warrens)
- *Linear landscape features*: Prioritise placing traps hard up against or on structures or features, in the following order of priority:
  - Linear hard edges of cover (e.g., bush edge fence lines)
  - Roads and walking/vehicle tracks
  - Bridges and culverts (on bigger structures (e.g. 2 lanes), more than 1 trap to cover both sides of track or road. Entry side often most effective)
  - Waterways and water body edges (ponds, dams, etc.)
  - Farm buildings
- *Contiguous bush country*: Focus on the following priority trap sites:
  - Ridges and spurs
  - Tracks
  - Saddles
  - Waterways
  - Trap lines within 300m of open country
  - Traps on sidle lines are often less effective, unless intersecting with one of the above features.
- Prioritise areas that will channel the ferret right to the trap site. Also consider maximising various high probability features through setting at:
  - Intersections
  - Bottlenecks

3. Trap density and coverage

- Aim for even coverage rather than simple line placement. No key features or travel routes (as per above) should be left untrapped. Dead ground such as open paddocks can be left untrapped and the trapping focused in areas/sites as previously noted.
- Aim for at least one trap per 8 hectares minimum, to ensure each home range has at least one well-placed, easily encounterable trap. Home range size can vary significantly due to factors such as population density and prey abundance, therefore increase trap density as needed to ensure sufficient coverage.
- Ideal trap spacing along linear features is no less/ wider than one trap every 200m. Spacing between lines can be up to 800m apart, but this needs adjustment based on landscape features within that distance. Not leaving any gaps in the habitat and on travel routes is a greater priority than designing a control programme around trap density. Seldom can line spacings be 800m apart due to suitable habitat and travel routes within that distance. Ensuring that traps cover all potential travel routes is critical. Focus on achieving even, consistent coverage rather than widely spaced lines with overly concentrated traps along those lines.
- The key with trap placement and regime design is to trap to landscape and features first to ensure good coverage.

4. Assessment and adjustment

- Pre-mark high-probability trap sites before finalising density.
- Review and adjust trap placement every two years based on capture data.
- Consider micro-movement (up to 50m) of traps that are not catching and cluster trap with additional traps at high catch sites.

5. Control buffer

- Implement a 3km control buffer around the core treatment area, trapping similarly to the core.
- Prioritise strategic locations such as roads and waterways for access control outside buffer trapping to help reduce reinvasion.

6. Track infrastructure

- Ensure a good track infrastructure and number each trap station for ease of relocation and data collection.
- Design loops that can be effectively trapped by one person in a day to minimise redundant travel.

Effective use of kill traps

7. Trap permanence and checking

- Leave traps out permanently.
- Brand new traps can be set as soon as placed - the key is using attractive lures that catch and hold interest (e.g., blood scent and carcass/ scent drags).
- Consider lure field life when determining inspection regimes.

8. Inspection timing

- Inspect traps monthly as a minimum and (when resources allow) increase to fortnightly during juvenile ferret dispersal season (February to April) and mating season (August/September).

9. Trap maintenance

- Regularly clear traps of body materials, maintain fresh earth at trap ends as a primary lure that increases interest, and keep vegetation away for better access and efficacy. The scent of fresh earth is in itself highly interesting to ferrets and acts as a primary lure outside the trap.
- Ensure that the access way to the trap entrance is well maintained.
- Ensure traps remain effective through regular servicing.
- Adhere to the Save the Kiwi *DOC trap 12-step checklist* for trap quality and consistency.

10. Data recording

- Collect catch data during trap checks and record it in a way that will enable comparisons to be made and trends noted. TrapNZ is recommended for this purpose. Ensure that all trappers can positively identify ferrets and instruct them to take a photo of the captured animal if unsure.
- Contribute your ferret catch data as requested to help build a national overview of ferret presence in or close to kiwi areas.

11. Understanding ferret behaviour

- Refer to the Save the Kiwi *Ferret Trapper's Guidelines* for further insights into ferret behaviour to improve trapping success.

Equipment

Trap type

12. Selection criteria

- Choose traps based on their ability to catch effectively and kill humanely, ease of use, maintenance, weight, portability, affordability, and safety around non-target species.
- The most frequently used kill trap is the stainless-steel DOC 250. In addition to this, a newer trap (the F-Bomb) is now available.
- Consider the presence of non-target species such as Weka and Kea. To ensure safety and compliance, check that your selection of traps meets the national protocols for other species.
- When working on Public Conservation Land, the traps available for consideration must be those accepted for use by DOC. These can be found on the DOC trap status list.

13. Trap testing and efficacy

- Test new trap options using trail cameras (refer to page 10) to assess animal interactions versus captures.
- Select traps with the highest 'trapability' rate for the environment. If unsure, seek out good advice from experienced practitioners.

Trap maintenance

14. New traps

- Test spring-off weight before field use. DOC 250 traps should have a maximum set-off weight of 120g.
- Ensure the trap is correctly positioned and mounted inside the box.
- Ensure the mesh entrances are smooth and sprag-free and correctly located as per DOC design specifications.

15. In-use traps

- Implement a formal maintenance regime, regularly clean traps, and unset and reset un-sprung traps monthly to prevent seizing and release spring tension.

16. Annual testing

- Test all traps annually to ensure they have a maximum spring-off weight of 120g.

Tunnel/Cover

17. Tunnel functions

- Tunnels must:
  - 1) orient the animal relative to the trap;
  - 2) protect the trap;
  - 3) keep out non-target species.
- Adhere to DOC specifications for (DOC250 trap) tunnel design (refer to docdm-29851).
- Note: Weka could be at significant and unacceptably high capture risk from current kill trap systems. If wanting to operate ferret traps in weka habitat the risks and benefits of doing so will need to be assessed on a case-by-case basis in consultation with DOC. In each case, DOC may also be able to advise on provisional modifications (not yet well-tested) to trap boxes that may help manage risk. This consultation with DOC should be done in the planning stages before procuring traps.
- Note: None of the current ferret kill traps can be used in kea habitat.

Lures

18. Selection and use

- Use big, natural, highly attractive lures such as rabbit, hare, beef, possum, and venison (leaving skin on rabbit, hare and possum baits).
- Blood scent trails and fresh meat baits are particularly effective.
- The best lure for a ferret is what it is already used to feeding on.
- Visual (non-scented) and synthetic lures are less effective.
- Change lures monthly at a minimum.

Effective use of cage trapping

19. Complementary trapping

- Use pulsed cage trapping as an additional method to remove ferrets that avoid kill traps. Treadle plate cage traps are recommended for their ease of use and proven higher capture rates.

20. Placement and timing

- Place cage traps at high catch kill trap sites and during dispersal (February to April) and mating seasons (August/September).
- Consider testing additional high probability locations as part of the trap pulse.

21. Best practices

- Refer to the Save the Kiwi Chasing Zero videos and Ferret Trapper's Guidelines for best practice cage trapping methodology.

Trail camera monitoring

22. Presence/absence monitoring

- Use trail cameras to detect ferret presence and test control method efficacy. Cameras should be placed along high-value travel routes at a density of one per 40-50 hectares.
- It should be noted that ferret presence in the buffer should be treated as seriously as in the core and detection and removal regimes should reflect this.
- To help with efficiency a permanent trail camera detection regime (swapping out and checking SD cards) can be completed at the same time as your trapping regime in that area.
- It should be noted that when considering ferrets in or near a kiwi population the detection regime is a presence/ absence method and not an index of abundance. Trappers should locate and use cameras as though they are the most sensitive trap in the network.

23. Trail camera set-up and adjustment

- Adjust camera placement to cover all possible travel routes and target specific ferrets detected by cameras with cage traps. Trail cameras should be located as though they are a trap, with micro placement given priority.
- Refer to the Save the Kiwi Chasing Zero videos and Ferret Trapper's Guidelines for best practice trail camera methodology.

Supporting information

Written content

- Save the Kiwi *Ferret Trapper's Guidelines*
- Save the Kiwi *DOC 250 12-step checklist*

"Chasing Zero" video series

- What is Chasing Zero?
- The mindset of a predator hunter
- Introduction to the four pillars of trapping
- Pillar 1 of trapping: selecting the right trap
- Pillar 2 of trapping: location and positioning of traps
- Pillar 3 of trapping: encouraging interaction
- Pillar 4 of trapping: make it easy
- Correct trail camera setting method to locate ferrets

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