NZ PENGUIN initiative
RESEARCH & CONSERVATION

This document provides a summary of the detailed monitoring protocols developed for community group use, as part of NZPI's national monitoring programme. Available for download at www.penguin-conservation.nz/downloads.

Monitoring

Starting up
- Monitoring begins 2 weeks prior to the earliest known egg laying date at the colony.
- Undertake an initial nest survey, transponder all* kororā found, and number the nest sites. *Providing they meet minimum age and condition requirements.

Transpondering
- All persons transpondering must be L2 or L3 certified (unless working under direct supervision of an L3) and follow best practice guidelines (see full monitoring protocols document).
- Record transponder insertion data as outlined below.

Nest Checks
- Monitoring rounds occur either weekly or fortnightly. 2-3 people is optimum.
- Routinely move through the colony, stopping to inspect each nest with minimum disturbance. Record nest data as outlined below.
- Nests in deep burrows, beyond direct observation will require inspection with a burrowscope. Burrow nesters may require their IDs to be read while travelling to or from the nest, or by using an in-situ hoop reader left at the burrow opening.
- Chicks should be transpondered ca. 6 weeks after hatching.

Handling kororā
- Handling time is always to be kept to the minimum.
- To lift a bird off the nest, first gain control of the head then place the other hand underneath the bird to support its full weight, lift and place the bird into a catch bag. Never grab a bird by the flipper.
- Lifting birds that are on eggs or young chicks should be reserved for highly experience handlers.
- Wash soiled bags and clothing in a solution of Sterigene between sites and at the end of each day. Wipe other equipment down using alcohol wipes.

Equipment

- PIT tags (Trovan 11mm)
- Insertion gun (Trovan reusable plastic syringe)
- Transponder reader (Gallagher HR5)
- A sharps container for used injection needles
- Alcohol wipes/ alcohol & pipette/ cotton pad
- Restraining bag ('weigh bag')
- Vernier callipers
- Scales
- Hand sanitiser
- Burrows-scope
- Torch/ headtorch
- Field notebook/ Recording sheet/ app
- Gloves
- First aid kit
- Map, GPS unit or smartphone with nest locations

Data Recording

The below data is to be recorded into the NZPI database app that runs off smartphones (under development). If digital data recording is not an option, NZPI can supply data entry sheets and pre-printed notebooks- Paper records then need to be transcribed to a digital spreadsheet and uploaded to the NZ penguin database and backed up in a designated Dropbox folder.

Transponder Insertion Data

1. Transponder number
2. Date and time
3. Region (e.g. Otago Peninsula)
4. Location (e.g. Pilot's beach)
5. Site
6. GPS coordinates
7. Weight
8. Measurements of bill depth & length
9. Age (i.e. chick/juvenile/adult)
10. Life-stage (i.e. breeding, non-breeding, pre-moult, pre-breeding)
11. Side portrait of head ('mug shot')
12. If marking chicks: Nest ID (see 3.1.7)
13. Notes

Nest Monitoring data

1. Nest ID
2. Date and time
3. Number of adults present
4. ID of birds (transponder numbers)
5. Nest contents (no. eggs and chicks)
6. Observation type (direct observation/ burrowscope)
7. Photo (Optional when using app)
8. Notes

Recovery of birds in the open

1. Bird ID
2. Date and time
3. Region (e.g. Otago Peninsula)
4. Location (e.g. Pilot's beach)
5. GPS coordinates
6. Bird status
7. Photo (Optional when using app)
8. (if dead) Collected for post-mortem?
9. (if dead) suspected cause of death
10. Notes

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Monitoring

No handling will occur under tier 2 monitoring.

Starting up
- Monitoring begins 2 weeks prior to the earliest known egg laying date in the colony.
- At the time of first monitoring, an initial survey should be undertaken to identify nest sites. Nests are to be numbered for identification and reference. Record the GPS position of each nest using a handheld GPS unit or GPS capable smart phone.

Nest Checks
- Monitoring rounds occur either weekly or fortnightly
- 2-3 people is optimum for nest checks
- Systematically move through the study colony, stopping at each nest to inspect and record nest contents.
    - Firstly, record if the nest appears active.
    - Inspect nest contents, recording the number of adults, eggs and/or chicks present on the nest. Do so with minimal disturbance; speak quietly, avoid shining bright lights directly at penguins, keep the time at nests to a minimum.
    - Nests in deep burrows, beyond direct observation may require inspection with a burrow-scope. Note that when using a burrows-scope it will not always be possible to confirm nest contents.
    - Do not 'guess' nest status if nest contents cannot be assessed.
    - Record data as outlined below.

Other
- If required, remove any hazardous items from the nest if you can do so without causing undue stress. Hazardous items include litter, sharps or any item that poses a risk of entanglement.
- Report any sick or injured wildlife to the Department of Conservation hotline (0800 362 468), or your local DOC contact if prior agreed.
- Dead chicks are to be left in the nest. Establish with your local DOC contact what protocols to follow if dead penguins are found.

Data Recording

The below data is to be recorded into the NZPI database app that runs off smartphones (under development). If digital data recording is not an option, NZPI can supply data entry sheets and pre-printed notebooks.

Nest Monitoring data to record

1. Nest ID
2. Date and time
3. Number of adults present
4. Nest contents (no. eggs and chicks)
5. Observation type (direct observation/ burrowscope)
6. Photo (Optional when using app)
7. Notes

Equipment

- Burrow-scope (optional extra)
- Map/ GPS unit/ smartphone showing nest locations
- Torch/ headtorch
- Field notebook/ NZPDB app
- Hand sanitiser
- First Aid kit

Tier 3 Monitoring Protocols
Cheat Sheet

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Field Work

Trail cameras

- Cameras should be set up to record access paths, where penguins travel between the sea and the colony. Multiple cameras can be used to cover multiple access paths.
- Strap the cameras securely to existing material (branch, trunk, rock) or fix to a stake in the ground.
- Number the cameras (if not already permanently marked with a number) and record their GPS position.
- Ensure cameras are not easily visible from public access paths to prevent theft; alternatively, cameras can be secured with steel cable and padlocks or a security box.
- Set cameras to record 20 seconds of video each time they are triggered, with a 5 second trigger interval.
- Batteries and SD cards need to be replaced every 7-14 days; do so in the middle part of the day to avoid the most active penguin times.
- The cameras run on 8x AA batteries; an allocation of 16 batteries per camera will allow for rotation of charged batteries and keep the cameras running.
- 2x SD cards should be allocated to each camera and marked accordingly, e.g. camera #1 should have SD cards #1A and #1B.
- Transport SD cards and batteries securely in a sealed container.

Equipment

Trail cameras

- Trail cameras
- SD cards (min. 32GB; 2 per camera)
- Rechargeable Eneloop AA batteries (12 per camera)
- AA battery charger
- Stakes (optional, for trail camera placement)

General

- First aid kit

Video Playback & Data Recording

Data is to be recorded when reviewing trail camera footage and should include the following:

1. Date (visible on the video footage)
2. Time (visible on the video footage)
3. Species observed
4. Number of individuals
5. Same animal Y/N (Was this the same animal observed on the previous clip?)
6. Direction of travel (down to the sea or up, away from the sea)
7. Name of observer (the individual reviewing the footage
8. Notes

A template for data recording can be found here:

https://docs.google.com/spreadsheets/d/1-XEi_72CxOnKwzyazmL2cnhHTzYzNIUhKWOz08GftCg/edit#gid=0