



FIELDWORK PROCEDURES FOR WORKING WITH LITTLE PENGUINS

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*We acknowledge the
Traditional Custodians
of the land on which we
live, work and learn, the
Bunurong people. We pay our
respects to their Elders past
and present.*

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1. INTRODUCTION

The Phillip Island Nature Parks (the Nature Parks) Conservation Department has several different Little penguin fieldwork activities that occur year-round. Little penguin fieldwork is the practical work conducted in the penguin colony, including burrow checks to identify breeding stages, monitoring the population and health of the colony, blood sampling and GPS tracking, to name a few. Much of this data is critical to inform decision making processes in the conservation management for this species.

1.2 Document Scope

This document outlines the guideline for working with Little penguins and is developed to ensure that anyone who takes part in Little penguin activities, including the Nature Parks staff, students, interest groups or volunteers; understand the key information prior to beginning the activity. This includes the pre-fieldwork procedures, permit approval requirements, individual responsibility, health and safety procedures, cultural heritage and environmental compliance, and appropriate procedures for handling and monitoring of penguins during research activities.

This document details the key information required to ensure the governance procedures of working with Little penguins in the natural environment at the Nature Parks is compliant and identifies the training requirements before any direct fieldwork can commence, so optimum standards of animal welfare is upheld at all times.



Image 1: Little penguin, *Eudyptula minor*.

2. GOVERNANCE

2.1 Licences, approvals and permits

In order to conduct research on animals in Victoria, an institution must hold a Scientific Procedures Fieldwork (or Premises) Licence from the Department of Jobs, Precincts and Regions (DJPR). The licence requires the Institute to have access to an Animal Ethics Committee (AEC).

Prior to AEC approval being sought for any project that involves the handling of Little penguins, the project and procedures must be approved by the Conservation Manager. The AEC is a committee established under Victorian legislation Prevention of Cruelty to Animals Act 1986 (“the Act”) and Prevention of Cruelty to Animals Regulations 2008 (“the Regulations”). The legislation stipulates that care and use of animals for scientific and teaching purposes must comply with the Australian Code for the Care and Use of Animals for Scientific Purposes 8th Edition 2013 (“the Code”).

The AEC considers and can elect (by consensus) to approve research project applications on live vertebrate animals and adult cephalopods (e.g. octopus and squid). Project applications can also be returned for revision or modification or be rejected, and approved projects can be terminated. This process is to ensure projects comply with “the Code”. The basic tenets are that animal use must be justifiable and that the 3 R’s, replacement (of animals), reduction (in number of animals used) and refinement (of procedures), are fully considered. All projects are reviewed at least annually. Projects are approved by the AEC for up to 3 years whereupon a new project application must be submitted in order to continue.

Animal Ethics approval is required before applying for a Wildlife Use Permit issued by DELWP. No research can be conducted in Victoria without a DELWP permit (and hence AEC approval).

The relationships between the Nature Parks Board of Management, AEC, Conservation Department, Scientific and Research Advisory Committee (SRAC) and the Department of Jobs, Precincts and Regions (DJPR) are illustrated over the page.

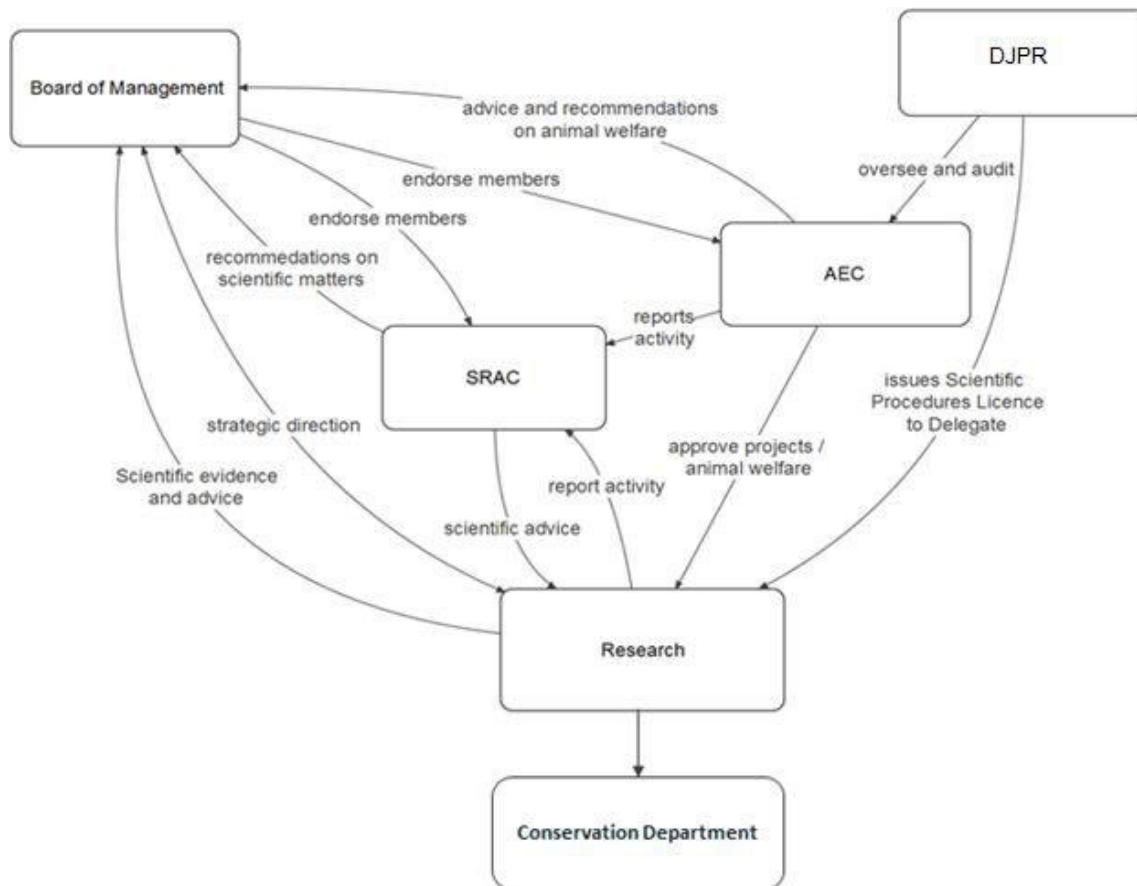


Figure 1: The relationships between the Nature Parks Board of Management, AEC, Conservation Department Research, Scientific and Research Advisory Committee (SRAC) and the Department of Jobs, Precincts and Regions (DJPR).

Each AEC approval will have principal investigator(s) who are legally responsible for all activities conducted under the ethics approval, and who are responsible for ensuring all activities in a project comply with approved procedures and “the Code” to safeguard the welfare of all animals that are used in the project. Breaches of an AEC approval may result in a possible fine or even a jail term for the principle investigator(s).

2.2 Training and approvals prior to penguin field activities

All field activities involving Little penguins will only be conducted by people assessed as competent for that procedure. Competency will be determined by the specified trainers in the AEC application and under direct supervision of qualified Nature Parks staff. After being assessed as competent, the investigators name will be added to a register and a certificate will be issued outlining the documents needed to be understood and adhered to. If a breach in policy, procedures, approvals or permits is seen or reported, the decision may be made to void the competency of the person breaching them. All

people handling Little penguins will have their field competency, for the procedures for which they have been approved, reassessed annually by qualified Nature Parks staff to ensure high level of skills is maintained. If someone is not deemed competent by a trained Nature Parks staff member, then they must cease conducting fieldwork and be retrained to a level considered appropriate by the trainer.

2.3 Adverse outcomes

If there are any adverse outcomes, as defined by the ethics approval, for any animals in a project, work must cease immediately and the principal investigators (PI) must be informed as soon as possible (in person, phone, text message, email), with their contact details being available on the ethics approval. Qualified Nature Parks staff will also have the authority to cease the work immediately if they witness a breach of this policy.

3. HEALTH AND SAFETY

3.1 Prior to fieldwork

Before starting any Little penguin fieldwork, the Nature Parks compulsory volunteer and staff induction must be undertaken and the relevant Safe Work Methods Statement (SWMS) read, understood and signed. Appropriate training for each procedure (as detailed in this document) by qualified Nature Parks staff for the work that will be undertaken must be approved and witnessed by the PI, or their delegate, before any practical fieldwork is undertaken. Under no circumstances can a person participate in an activity alone unless approved by the PI, or their delegate, to do so.

3.2 Personal safety

Personal medications that may be required (e.g. Asthma pump, epi pen, etc) should be brought to each field session and ideally kept on the person. The Nature Parks Conservation staff members on duty should be informed of medical conditions that people are likely to be affected by while out in the field.

Before entering the Little penguin habitat, appropriate clothing must be worn (long pants, closed in shoes, long sleeved top), Personal Protective Equipment identified and collected as well as a hat, sunglasses, water, and sunscreen, especially in the warmer months. Bright colours should be avoided when in the field, especially at night, to remain cryptic in the natural environment. At least two snake bandages must be in each penguin field kit and each person should know where the nearest first aid kit is; one is located in each of the Nature Parks vehicles, in the Penguin Parade Visitors Centre, the Sky Box, Penguins Plus and the Nobbies Centre. Most Conservation staff members are level two first aid trained and can provide first aid if required.

3.3 Bio-security

Pathogens spread by human contact have had negative impacts on penguin populations, which have most notably been seen in Antarctica. However, populations that have had regular human contact over decades are likely to have an immune system that is better at coping with different

parasites, bacteria and viruses. Furthermore, spread of noxious weeds may have negative impact on suitable habitat quality. As a precaution and to reduce the chances of introducing harmful pathogens and weeds, the following guidelines have been put in place when working with Little penguins on Phillip Island.

3.3.1 Fieldwork on Summerland Peninsula

Any clothing that has been in contact with other birds or poultry must be put through a hot wash with laundry detergent before being worn in the penguin colony. Any shoes that have foreign material (e.g. mud) not from the Summerland Peninsula should be scrubbed to remove the debris. All shoes must then be sprayed with a 1% bleach solution prior to entering the penguin habitat. This bleach solution can be made by diluting 4% bleach (eg. White King) with three parts water and sprayed so that the sides and bottom of the shoes are thoroughly covered.

If any vehicles are to be taken off road (e.g. on fire breaks) the vehicle must first be properly washed down in the wash-bay facility at the Koala Conservation Reserve. This wash down must include removing all mud and debris from tyres and washing down grills, undercarriages and trays.

3.3.2 Fieldwork in other penguin colonies

Further precautions need to be undertaken if moving between penguin colonies, both before entering a new colony and upon return. As well as wearing clean clothing and shoes (see above), all penguin weigh bags need to be washed at 60 degrees with laundry detergent and then tumble dried on a hot setting. All equipment used, such as callipers and balance scales must be wiped down with alcohol wipes.

4. LITTLE PENGUIN HABITAT

4.1 Cultural significance



Image 2: An Aboriginal midden site

Summerland Peninsula is a culturally sensitive location for the Bunurong and Boon Wurrung Peoples. Many middens (feeding and gathering spots) are located around the Peninsula, including at the Penguin Parade. All Aboriginal cultural places in Victoria are protected by law and it is illegal to disturb or destroy an Aboriginal place, including knowingly walking over a midden. A map of all the known registered cultural heritage sites on Summerland Peninsula can be found in Appendix 1. However please note that not all sites have been registered, so care will still need to be taken when walking through culturally sensitive areas.

4.2 Habitat

The Little penguin habitat on Summerland Peninsula is made up of both natural and artificial penguin burrows (nest boxes). Natural burrows can be found dug into the sand and soil and amongst natural vegetation such as bower spinach and poa tussocks. From September to April, Short-tailed shearwaters breed in high density around the Peninsula, including the Penguin Parade. During this time, the Little penguin colony is a fragile environment and extra precautions must be taken when walking off the boardwalks around the Penguin Parade and Nobbies Centre, or off the roads around the Summerland Peninsula.

4.2.1 Walking through natural habitat

Special attention must be paid to where people are stepping as natural burrows can easily be collapsed. This precautionary principle is also critical when Short-tailed shearwaters are nesting as they have deceptively long and fragile burrows which are at high risk of collapsing. Best practice at the Nature Parks is taken and it is advised no one is to step directly to the side of, or behind, any natural burrow as they are likely to collapse. Care needs to be taken around artificial nest boxes as birds (both penguins and shearwaters) extend their burrows outside the box perimeter. Collapsing a burrow may result in injury and potentially even death of the seabird, failure of the breeding attempt and may also injure the person involved.

4.2.2 Burrow collapse

If a burrow is collapsed, it must be dug out immediately to ensure that there are no birds/eggs under the sand that has been pushed into the burrow. Also make sure that the rest of the burrow remains open, allowing any birds that might be deeper in the burrow access to get out.

4.2.3 Minimising disturbance to penguins

All people who are in the colony, especially when handling penguins, must always stay calm and quiet. In the field, Little penguin handling times must be kept to a minimum to reduce stress on the birds. Little penguins must be processed as soon as they have been removed from the burrow and then immediately released back into the burrow that they were removed from; this process must take less than five minutes.

Generally, Little penguins in the field must not be handled in the rain or in high temperatures (~32 degrees and above), or as otherwise directed by trained Nature Parks staff.



Image 3: An example of the habitat on Summerland Peninsula.

5. HIGHER DEGREE STUDENTS, VOLUNTEERS AND CITIZEN SCIENTISTS

5.1 Higher Degree students

Higher Degree students (Honours, Masters, PhDs, etc) must first be adequately trained by qualified Nature Parks staff and approved to conduct the specific procedure by the Principal Investigator (PI) or their delegate. They must ensure this compliance action is upheld and will not commence any fieldwork independently until they have been approved by the PI. Any volunteers that will assist students, must not handle penguins unless the student is listed as a trainer on the AEC approval, are being actively supervised by the student, and have been pre-approved by the PI. Volunteers must follow this same procedure process in training and handling of any Little penguins.

5.2 Volunteers and citizen scientists

Volunteers are classified as person(s) providing their time willingly to the Nature Parks, for the common good and without financial gain.

Citizen scientists are defined as members of the general public who collect and/or analyse data relating to the natural world, typically as part of a collaborative project with professional scientists.

Volunteers and citizen scientists involved in an AEC approved project must always be actively supervised by a qualified Nature Parks staff member while they are in the field. Long-term volunteers and citizen scientists are to be added as investigators on AEC approvals once they are deemed competent by an authorised trainer, as listed in the AEC approval. Fieldwork involving volunteers and citizen scientists may be simplified (e.g. reduced or no penguin handling) and this is project dependent and at the discretion of the PI and Conservation Manager.

Volunteers or citizen scientists are not permitted to conduct any invasive techniques such as microchipping Little penguins. Qualified Nature Parks staff that are authorised to carry out invasive techniques may do so if this situation arises in the field and it is deemed necessary for the approved research project.



Image 4 & 5: Volunteers at work

6. BURROW CHECKING

Penguin welfare is paramount, and the approach of the Nature Parks is to reduce stress on penguins during the course of fieldwork whenever feasible. The development of non-invasive tools and technology at the Nature Parks, has provided an opportunity for research on Little penguins to be progressive and ensure the birds welfare is always upheld. There is a greater understanding of what human impact has within our Little penguin colony, and the primary goal is to reduce the stress during Little penguin research. This can be achieved by adopting innovative tools and technologies that continue to provide key information with minimal impact to the seabirds.

Where possible, the direct removal of a Little penguin from its burrow should be avoided and instead, the use of the Data Recording Scanners employed to record microchip details (see section 6.5.2 Data Recording Scanners).

6.1 Checking nest boxes with removable lids

There should not be any handling of adult Little penguins occupying nest boxes with removable lids unless they require microchipping, the penguin chicks require handling (for more details, see section 6.8 Little penguin chicks) or they are involved in a specific project with animal ethics approval such as GPS tracking, blood sampling, etc.

6.2 Removing penguins from nest boxes

If a penguin needs to be removed from a nest box with a removable lid, the lid should be opened, and the bird removed through the top of the nest box quickly and carefully. Control of the bird is gained by gently yet firmly placing a gloved hand or weigh bag on the back of the bird, with a thumb near the base of the bird's skull and fingers splayed down the front. Once there is control of the head, another hand must be placed under the bottom of the bird to fully support it before it is lifted up. A bird must never be lifted by the neck alone as this may injure it. The nest box lid should be placed back immediately after the bird has been removed.

Removal of Little penguins from nest boxes must be done quickly (under 10 seconds) to reduce stress. This is critical if the bird is incubating eggs or on very young chicks. The longer the delay in removing an adult from the nest box, the greater chance there is of an egg breaking or of small chicks being injured due to the stressful encounter.

6.3 Checking natural burrows/nest boxes with lids that cannot be opened

Adult birds will in most circumstances, require removal from nest boxes with lids nailed shut and from natural burrows. It might not be possible to get a scan of the microchip from the burrow entrance with the Data Recording Scanners. During the breeding season, special care must be taken to ensure no damage is done to any eggs or small chicks. If the burrow is difficult and the bird cannot be easily accessed or removed, then there must be no removal of the bird.

6.4 Removing penguins from natural burrows/nest boxes with lids that cannot be opened

These burrows are identified and deemed as more difficult to work with Little penguins, so individuals must not attempt to handle them until they have been trained and approved by trained Nature Parks staff.

A gloved hand is placed inside the burrow, sliding it along the bottom of the burrow until the bird is reached. A foot should then be felt for, grabbed onto and the bird carefully pulled out of the burrow. If eggs or small chicks are felt, the adult penguin should be gently lifted up and over them.

Once the back legs are out of the burrow, gloves should be removed (to make handling easier) and the other foot caught. Often, this is the time where the penguins splay their flippers making it difficult to pull them out. Penguins should not be forcibly pulled out of the burrow if this happens. Instead, while both legs are being held, the penguin should gently be 'rocked' or 'wiggled' from side to side while still being pulled backwards. The penguin should soon let go.

Carefully check around the burrow that no eggs or chicks have been accidentally dragged out with the penguin, particularly check through any nesting material for eggs or tiny chicks. Once the nesting material has thoroughly been inspected, it should be placed back into the bowl of the burrow, ensuring that no eggs or small chicks are covered.



Image 6: How to hold a Little penguin, ensuring the head is under control



Image 7: Scanning Little penguins inside a box, without removing the bird.

It is important that the bird is removed from the burrow only by its feet. Never handle penguins by the flippers, they are their most fragile part and once broken they will not heal. If you suspect the flippers have been damaged, intervention is required, and you must follow the procedures as per section 7.2 Injury during field procedure.

6.5 Scanning a penguin

Once the lid is opened, or the bird is out of the burrow, it will need to be scanned for a microchip. Using the Data Recording Scanners (DRS), press the red scanning button and place the scanner over the shoulders of the bird. The scanner will beep when the microchip number is read and then the appropriate fields (LoCode, Site, BurrowNumber, number of adults, etc) can be entered.



Image 8: Scanning a Little penguin after it has been removed from its burrow.

6.5.1 Un-microchipped penguin

If the penguin has been thoroughly scanned, including the entire back and sides of the bird and there is no beep, then it is likely that the bird is not microchipped with a Trovan microchip. Double checking with a TIRIS compatible scanner (such as the AREH5 scanners) may be required and if there is still no microchip read, record the bird as untagged ('UT') in the comments section of the scanner. If the bird requires microchipping for the project and a trained, approved and qualified person in microchipping is available, the bird can be microchipped rather than entering UT in the scanner. Please note, that only a small number of people will be trained in microchipping and they must be approved by trained Nature Parks staff, before doing so.



Image 9: The screen of the scanner after a microchip has been detected.

6.5.2 Data Recording Scanners (DRS)

Most of the data collected can directly be put into the DRS, eliminating the use of paper. There are two types of DRS; one type can only read TIRIS microchips and the other can only read Trovan microchips. TIRIS microchips are only used in one location, Area 3 at the Penguin Parade. However, birds with TIRIS microchips are often found in the habitat directly around this area and occasionally elsewhere.

When a microchipped penguin has been scanned by a DRS, the scanner will beep, automatically record the microchip number and prompt for information such as location, burrow number and contents, weight and sex.

6.6 Sexing penguins

Adult birds can be sexed as male or female. Males on Phillip Island have bill depths greater than 13.3mm and females have bill depths less than 13.3mm. The process involved in taking a bill depth is explained in the morphometrics section below (6.12.3 Bill depth). After practice, it is possible to visually identify the sex of penguins, with males having thicker bills and often a more pronounced hook. The sex field in the Data Recording Scanners should be left blank if sex is unsure, as this can be looked up and filled in later by the Research team.

6.7 Weighing penguins

6.7.1 When to weigh adult penguins

Adult penguins only need to be weighed under the following conditions:

- Before microchipping
- If removed out of a natural burrow or a nest box without a removable lid and placed into a bag.
- If the adult is in a burrow with chicks and the chicks require weighing.
- It is a specific requirement of the project and approved by the Principle Investigator.

6.7.2 How to weigh a penguin

All balance scales should be zeroed first by weighing an empty bag and adjusting the balance to show 0. If the weight of a penguin must be taken, once a bird has been scanned it should immediately be placed into a bag. The easiest way to do this is to hold the bird with one hand, supporting its weight along the handlers arm and/or hip and use the other hand to hold the bag. Place the bird headfirst into the bag then tip the bird upside down, letting the weight of it push it into the bag.

Once the bird is in the bag it can be weighed using a 2kg spring balance. The spring balance goes up in increments of 10g to a maximum of 2kg. Odd numbers are on the left; evens are on the right (see image 10). If the weight of the bird falls directly between two of the lines (and so appearing as, say, 1015g) round up or down to the nearest 10g. When weighing the bird, it is important to make sure that the scales are at eye level and the bag is not touching the ground.

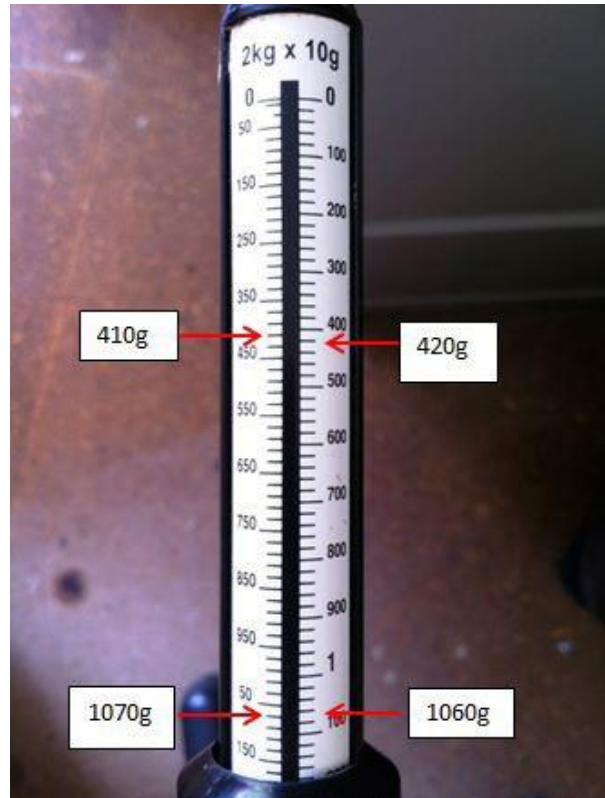


Image 10: 2kg balance scales showing the weight increments.



Image 11: Weighing a Little penguin, ensuring that the balance scales are at eye level and the bag is not resting on anything.

6.8 Little penguin chicks

6.8.1 Data required

If required, weight, bill length and head length need to be measured when chicks are first detected in the nest, to estimate hatching date and to gain an idea of their health and body condition. Thereafter, weight can be measured at each encounter until fledging, if needed for the project. Small chicks must be handled with extreme care and placed back into the nest bowl once their measurements have been completed.

Chicks must be placed back into the burrow as soon as possible and must not be out of the burrow for more than five minutes.

6.8.2 Staging chicks

If age staging of young, pre-blue feather chicks is required, the guide is given below:

A – 1 - 7 days old. The eyes are closed until the second or third day when an eye slit is apparent, and the eyes are fully open at 1 week; sparsely covered in first down which is dark grey; bill black

B – 2 – 3 weeks old. second down (thicker and chocolate brown) appears after one week; iris is dark grey in colour; the region between the nostrils and eyes (the lore) and around eye bare until 3rd week

C – 4 – 5 weeks old. Sheathed feathers appear at 4 weeks, down is shed from underside of flippers, iris changes from dark to pale grey at 5 weeks

Once chicks start developing blue feathers, they can be classed into a P stage.

Below is the guide on the P stages, and copies of the guide are available to take out into the field. See Appendix 2 for photos and descriptions of chick and adult moult stages.

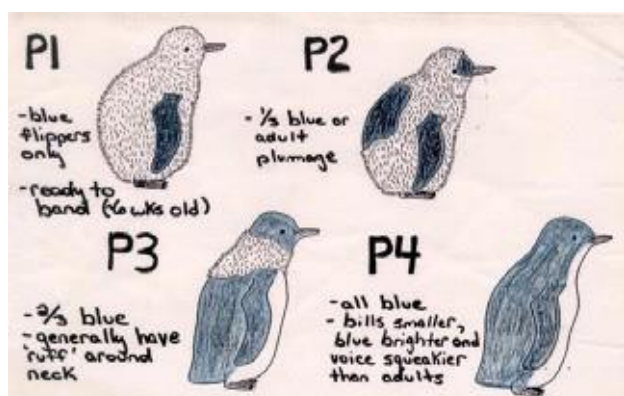


Image 12: The different "P stages" of Little penguin chicks once they start getting their adult blue feathers.

6.8.3 Microchipping chicks

Once a chick is classed as P1 - P4 and weighs over 700g, it is eligible to be microchipped by a qualified Nature Parks staff member or trained Higher Degree student. If a chick is at a P stage but weighs less than 700g then it is too small and must not be microchipped.

6.9 Adult moulters

6.9.1 Staging moulters

If a bird is in moult, its moult stage should be recorded. Copies of the guide pictured below are available to use as a reference when out in the field. See Appendix 2 for photos and descriptions of chick and adult moult stages.

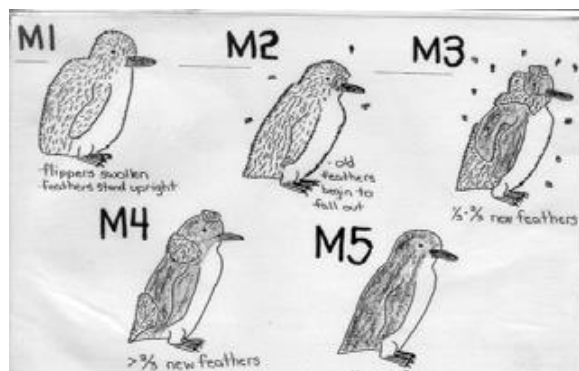


Image 13: The different adult moult stages of Little penguins.

6.9.2 Un-microchipped moulters

If there is an un-microchipped moulting bird, it must not be microchipped unless it is a M4 or M5, over 750g, and microchipping is required for the approved research project. When moulting birds are growing new feathers, there are a lot of blood vessels close to the surface. Microchipping a bird early in moult will result in the bird bleeding significantly more from the wound than normal.

Please note: It is sometimes difficult to distinguish between M5 and P4. P4's make a squeakier noise and their bills are considerably thinner and straighter.

6.10 Placing penguins into the burrow

If an adult penguin has been removed from the burrow, and once all the relevant data fields in the scanner have been entered, the bird can be put back into the burrow through the entrance.

If a nest box lid has been removed, it must be placed

back on the nest box making sure that is on properly and in the same condition as it was encountered.

Place the birds head inside the entrance of the burrow prior to letting it go. If the bird is let go and its head has not been directed into the burrow, it will run away and must then be caught and put back as it is at risk of being predated by daytime predators.

6.10.1 Placing penguins back in burrows with eggs or chicks

If the burrow contains any eggs or small chicks, ensure they are in the nest bowl before the adult is returned. Larger chicks that are upright and clearly mobile (~4 weeks and older) can be placed back into the burrow the same way that adults are.

Chicks must always be put in first, before any adult birds. If a burrow contains two adult penguins and eggs, the female bird must be placed back into the burrow before the male.

6.11 Microchipping penguins

6.11.1 Qualified microchipping personnel

Only staff and qualified students who have been trained, approved and deemed qualified by trained Nature Parks staff are authorised to microchip penguins. Volunteers or citizen scientists are under no circumstance authorised to microchip.

6.11.2 Microchipping criteria

Chicks can only be microchipped if they are P1 or greater and if they weigh over 700g. Adults must not be microchipped if they are in early moult, M1 - M3 or if they weigh less than 750g. The weight and morphometric measurements must be taken first before microchipping, as the penguin must go straight back into the burrow and not placed into a bag or handled, as the microchip might shift or fall out.

6.12 Morphometrics

Morphometric measurements need to be taken for some research projects. If required and approved for a project, penguin chicks should have their weight, head length and bill length taken when they are first seen in the burrow. Weight, bill depth and any other morphometrics required for the project must then be taken prior to microchipping, if microchipping is required.

For adults, weight and a bill depth measurement

need to be taken prior to microchipping.

6.12.1 Head length

Measured with callipers from the back of the middle of the bird's head to the tip of the beak. Ensure that the callipers are parallel with the beak.



Image 14: How to accurately measure the total head length of a Little penguin.

6.12.2 Bill length

Using the finer points on the callipers, bill length is measured from where the bill joins the head to the tip (the exposed culmen).



Image 15: How to accurately measure the bill length of a Little penguin.

6.12.3 Bill depth

This is measured from in front of the nares (nostrils) as this is the thinnest part of the beak. Ensure that the callipers are flush with the underside of the beak. When the measurement is taken, it is important to pull the callipers down, away from the bill, towards the direction of the fine calliper points, rather than pulling the callipers up over the length of the bill.



Image 16: How to accurately measure the bill depth of a Little penguin.

Table 1: The approximate minimum and maximum lengths for different Little penguin morphometrics. This can be used as a guide to make sure the measurements have been taken correctly.

Measurement	Minimum (mm)	Maximum (mm)
Head length – adults	85.0	104.0
Head length – P stage chicks	75.0	102.0
Bill length – adults	35.0	43.0
Bill length – P stage chicks	21.0	39.0
Bill depth – adults	11.0	16.0
Bill depths – P stage chicks	9.0	13.0

7. LITTLE PENGUIN EMERGENCIES

7.1 Signs of stress due to disturbance/handling

7.1.1 Physiological stress response

Little penguins can easily become stressed and if not recognised and minimised quickly, may lead to an adverse outcome for the bird. Dilated pupils, panting and feeling hot to the touch are signs that a Little penguin is becoming over stressed. If this happens, the penguin must be returned to its burrow immediately.

If these signs are not noticed or ignored, the penguin may become limp and unresponsive. At this stage, the penguin is near death and must be placed back in the burrow and the Wildlife Clinic Rangers or Research staff members contacted immediately for advice and assistance. This is an adverse outcome and all fieldwork must cease and the PI contacted. The PI must report such incidents to the AEC.

Behavioural stress response

Occasionally, another stress response observed is a penguin repeatedly leaving its burrow after being handled during the day. These penguins must be placed back into their burrows and a small amount of vegetation placed in the entrance to encourage the birds to stay in. If a penguin repeatedly leaves its burrow, Research staff members or Wildlife Clinic Rangers must be called for advice.

7.2 Injury during field procedure

If any Little penguin is injured, or suspected to be injured due to field activities, work must cease immediately. The bird must receive appropriate care and the PI and the AEC must be contacted immediately. It is the responsibility of every field team member to know who the Principal Investigator is and how they can be contacted. The Nature Parks Wildlife Clinic must also be contacted on 0409 558 482 so the injured bird can be taken into care without any delay.

7.3 Other injury/illness

Any penguin that is out in the open during the day, whether discovered on the beach or in the colony, needs to be communicated to the Nature Parks Wildlife Clinic Ranger. They will give directions on what action should take place with the bird. If the Wildlife Clinic Ranger cannot be contacted, the Chief Warden can be called on 0427 070 268 or, if afterhours (4pm – 7.30am), Wildlife Victoria on 8400 7300.

7.4 Heat stress

When penguins suffer from heat stress they can die very quickly. If a bird is suspected of being heat stressed, instant action is required.

Recognising heat stress:

- Rapid breathing, open mouth
- Weakness, inability to walk, convulsions/seizures

Often these birds are discovered outside of their burrow as they have attempted to make it to the water to cool down, only having made the situation worse by being in direct sunlight.

The heat stressed penguin must be cooled down as soon as possible. If down near the beach, then it is strongly advised that one person should run down and hold the bird in the water, while someone else contacts either the Wildlife Clinic Ranger or Ranger in Charge for support. Do not let go of the penguin when it is in the water and make sure its head is above the water.

Alternatively, if near the Visitors Centre or the toilet block go to the nearest sink and place the penguin under cool running water, while someone else alerts the Wildlife Clinic Ranger on duty.

A heat-stressed penguin can die within minutes, yet its death is preventable if action is taken quickly.

8. CHECKLIST PRIOR TO CONDUCTING FIELDWORK:

Permits and approvals. See pages 4-5

- Have all appropriate permits and approvals been granted?
- Have you read and understood them?
- Do you know who to contact and how in case of an adverse incident? i.e: Principal investigator

Health and Safety. See page 6

- Have you been inducted into the work area?
- Have you read, understood and signed the risk assessment for the work you are about to do?
- Do you have a communication device and are others aware of your whereabouts and estimated return time?
- Do you have all your appropriate PPE?
 - Long pants and closed shoes
 - Appropriate clothing for the conditions – jumper, hat, long sleeve shirt
 - Snake bandages
 - Gloves
 - Sunscreen
 - Water

Fieldwork. See pages 7-15

- Do you understand what fieldwork you are required to do? Eg: what data you are collecting
- Have you received appropriate training and been approved to do each procedure involved in the work by the Principal Investigator and trained Nature Parks staff?
- Do you have all the equipment required to carry out the work? Eg: scanners, enough weigh bags, spring balance, etc.
- Have you checked for any culturally significant or sensitive sites in the areas that you are working in?
- Do you know what to do if you accidentally collapse a burrow?
- Do you know how to recognise stress in a penguin?
- Do you know how to recognise a penguin emergency, what to do and who to contact?

I, _____ hereby state that I have read, understood and will adhere to the above procedures outlined in this document.

Signed

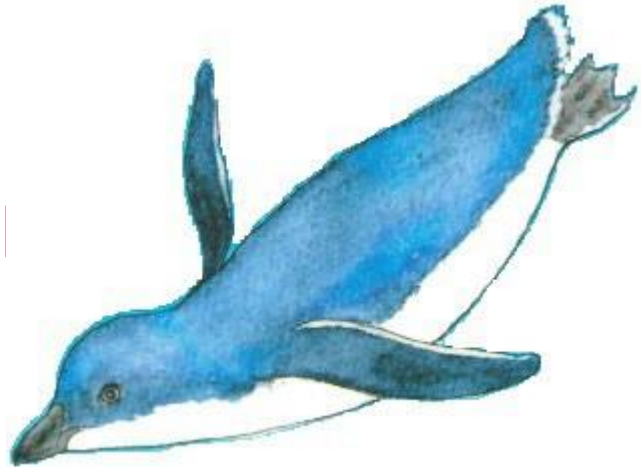
Full name

Date



STATEMENT OF ATTAINMENT

This is a statement that



Has attained competency in basic Little penguin handling

By gaining competency, the above named must read, understand and sign the Nature Parks Little Penguin Fieldwork Safe Method Work Statement and adhere to the Fieldwork Procedures for Working with Little Penguins at all times. Annual refresher training is required for all penguin handlers and must be witness by trained and approved Nature Parks staff.

This approval is conditional and can be revoked if a breach of procedure occurs. A request for retraining or clarification can be made to approved Nature Parks staff at any time if the above named is unsure of or has lost confidence in any procedures.

Trainer

Peter Dann
Director of Research, Phillip Island Nature Parks

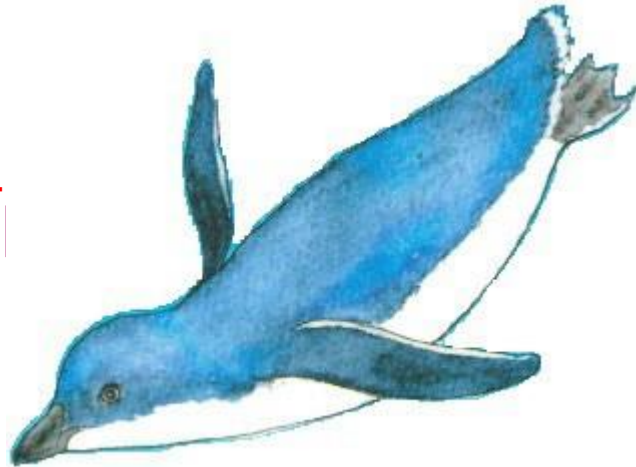
Date completed:

Reviewed:



STATEMENT OF ATTAINMENT

This is a statement that



Has attained competency in Little penguin microchipping

By gaining competency, the above named must read, understand and sign the Nature Parks Little Penguin Fieldwork Safe Method Work Statement and adhere to the Fieldwork Procedures for Working with Little Penguins at all times. Annual refresher training is required for all penguin handlers and must be witness by trained and approved Nature Parks staff.

This approval is conditional and can be revoked if a breach of procedure occurs. A request for retraining or clarification can be made to approved Nature Parks staff at any time if the above named is unsure of or has lost confidence in any procedures.

Trainer

Peter Dann
Director of Research, Phillip Island Nature Parks

Date completed:

Reviewed:

APPENDIX 1. MAP OF KNOWN MIDDENS ON THE SUMMERLAND PENINSULA



A map of all known and registered cultural heritage spots on Summerland peninsula. Note, a 50m buffer has been placed around the sites, given their cultural significance.

APPENDIX 2. PHOTOS OF CHICK STAGES AND ADULT MOULT STAGES

Chick Stages



Image 1: A stage chick. 1 - 7 days old and eyes are closed or only eye slits visible. They are sparsely covered in first down which is dark grey, and the bill is black

Image 2: B stage chick. 2 – 3 weeks of age, have a second down that is thicker and chocolate coloured iris is dark grey in colour; the region between the nostrils and eyes (the lore) and around eye bare until 3rd week.



Image 3: C stage chick. 4 – 5 weeks old. Sheathed feathers appear at 4 weeks, down is shed from underneath flippers and iris changes to pale grey, similar to adults, at 5 weeks



Image 4: P1 Chick. Blue feathers are predominately seen only on the flippers and bottom.



Image 5: P2 chick. More adult feathers are visible on the body but at least 2/3's of the body is still covered in down.



Image 6: P3 chick. Only 1/3 of the body is still covered in down

Image 7: P4 chick. All the down has been lost. Chicks can be distinguished from M5 adults due to their thin beaks and high pitched, 'squeaky' voices.

Adult moult stages



Image 8: M1. The flippers are swollen, and old feathers are beginning to stand up, but none are actively falling out yet.



Image 9: M2. Old feathers are beginning to fall out.



Image 10: M3. 1/3 to 2/3 of the new feathers are visible.

Image 11: M4. More than 2/3's of the new feathers are visible



Image 12: M5. All new feathers but the bird has not been out to sea yet. Feathers may feel powdery and have a deep blue colour.

ENSURING OUR WORK WITH LITTLE PENGUINS IS CURRENT, BEST PRACTICE AND OF THE HIGHEST STANDARD.

This procedures document underpins much of the penguin research conducted by the Phillip Island Nature Parks Conservation Department. It is supported by research and will be regularly reviewed and refined as our knowledge increases and further technology becomes available.

Version 1. This document has been compiled by Paula Wasiak on behalf of Phillip Island Nature Parks, Conservation Department.

ACKNOWLEDGEMENTS

Significant contribution has been made by:

- Jessica McKelson, Conservation Manager
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- Marjolein van Polanen Petel, Wildlife Rehabilitation Ranger
- Alona Charuvi, Research Technical Officer
- Dr. Rebecca McIntosh, Marine Scientist
- Dr. Kath Handasyde, former member, Phillip Island Nature Parks Animal Ethics Committee
- Phillip Island Nature Parks Animal Ethics Committee