ADVICE FOR FIRST RESPONDERS

This advice is provided for the first people who are made aware of a bat that could be injured. **Any bat that has been come across randomly (i.e. is unlikely to be injured) and appears sick, lethargic, or particularly aggressive should be handled only with extreme care, and always with gloves that will withstand a bite. This is because the bat may have an undiagnosed disease or have been poisoned, and the handler must protect themselves as a priority.**

If a bat is found in any of the following circumstances then it must be checked by a veterinarian and is likely to need care:

- On the ground during the day.
- Seen being attacked by another animal, such as a cat.
- In a tree that has been felled.
- It is likely that an incident has taken place, resulting in an injury to the bat.
- It was trapped or caught in something.
- There are obvious injuries.
- It is unresponsive or unconscious. Please note that bats do go into torpor - a reduced metabolic state - particularly if the weather is cold. Bats still breathe when in torpor, although at very slow rates (Morris *et al.* 1994). Bats in torpor can be mistakenly identified as dead. To find out more about torpor and how to rouse bats from it, scroll to the end of this appendix.
- Note that if the bat is inside a building it may just need assistance to escape (bats are known to use attics as roosts overseas and have been found in a building in New Zealand, Daniel and Williams 1984). If mobile, open up all windows and doors and turn off lights, so that the bat has the opportunity to fly outside by itself. If this is not successful, wait until the bat has landed then quickly place a cloth over it, carefully scoop it up and put it in a box that can be closed securely. Place the box outside, away from domestic animals and people, and let the bat emerge from the box in its own time. Do not swipe at the bat with a net as this may result in injury. If it is possible that the bat has been in the building for some time, i.e. several days or nights, then they should be checked by a vet for dehydration and other injuries.

Handling and Collection

Ideally, the bat should be placed in a cloth bag in a dark, quiet place at ambient (or slightly warmer) temperature and taken to a veterinarian for assessment as soon as possible[1]. A maximum of two bats should be kept in one bag (Appendix 2).

If you do not wish to handle the bat, and it is on the ground, place a cardboard box over it for protection, exclude domestic animals such as cats and dogs from the vicinity, and contact the Department of Conservation for advice/assistance on 0800 DOCHOT (0800 362 468)[2].

To avoid being bitten by the bat, you can wear gloves or use a small towel to scoop up the bat.

When handling the bat, care must be taken to not strain its wings, forearms, or flight muscles (Sedgeley *et al.* 2012). Handling should be kept to a minimum, to minimise stress.

Transport

- The bag must be secured during travel.
- Time spent transporting the bat should be kept to a minimum.
- Avoid diversions (e.g. don't go to the supermarket!).
- Keep the vehicle interior quiet (don't play loud music or talk loudly).
- Drive smoothly and carefully.
- Ventilate the car adequately as temperatures climb quickly in cars on hot days.
- Label the container/bag with "Live Bat".
- Let someone know that you are transporting a bat, in case of an accident (NSW WIRES Inc. 2018).

[1] The following was prepared for New Zealand forestry crews that are unlikely to have spare cotton bags handy: *"...put it in a cool, quiet, dark place, preferably in a cotton bag. If you don't have a cotton bag, then you might be able to tie up an old t-shirt and pop the bat into it. Wet the corner of the bag by dipping it into some water, and then hang the bag in a cool, quiet, dark place. Heat makes bats more active and burns through their energy quickly. Wetting the corner of the bag gives them water to drink."* (Borkin 2018). This recommendation differs slightly from that provided by Wildcare (R. Lyons, Wildcare, pers. comm., 27 May 2019), i.e. that ambient or slightly warmed temperature is best so that bats do not enter torpor.

[2] Advice provided for Department of Conservation Duty Officers is set out in Appendix 2 of Borkin (2019) Initial veterinary care for New Zealand Bats. *Wildland Consultants Ltd report number 4984*; Prepared for Department of Conservation, Wildlife Society of the NZ Veterinary Association, and NZ Transport Agency.

Record the History

Recording of a detailed history is critical to help understand what injuries, if any, the bat may have. A good way to compile a history is to answer the following questions:

- What time of day and date was it found?
- Who found the bat?
- Where was it found?
- What was it doing when found?
- What species is it, if known?
- What is its age (does it have hair?) and sex (male bats have an obvious penis)?
- Were other bats present?
- What happened/had just happened when it was found?
- If there has been a delay between the bat entering care and when it was found, what has happened over that time and where has it been previously?
- Has it had any treatment?
- Is it demonstrating any abnormalities, e.g. obvious broken bones, vocalisation, wing tears, puncture wounds?

Contact the Department of Conservation on 0800 DOCHOT (0800 362 468) to find out where to take the bat.

Is the bat in torpor?

Long-tailed bats go into torpor when they lower their body temperature, and metabolism, to save energy. In the summer this is largely 'light torpor', but the colder the temperature, the deeper it gets. At its extreme, their body temperatures are likely to go close to 0˚C, and they might only take a breath every couple of minutes. This means that bats can be in torpor and mistakenly identified as being dead.

If bats are disturbed when in partial torpor, they often extend their wings and tail until they are fully rigid, bare their teeth and utter a squeaking sound – this is a defense response. Even then their body temperatures are still very low, and they may arouse slowly over 15-30 minutes. Bats may be aroused from torpor by placing them in a warm, but not hot, safe location and checking on them regularly.