

**Template for operant conditioning protocols, behaviour management plans, and live animal event programmes at HCC.**

**Fruit bat training programme May 2017**

Fill out the New Training Information in the boxes below. Please complete all sections.

|  |  |
| --- | --- |
| Behaviour/Routine |  |
| Training purpose |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ☐ | Education | ☐ | Identification | ☐ | Reproduction |
| ☐ | Enrichment | ☐ | Nutrition/Supplement | ☐ | Research |
| ✓☐ | Health care | ☐ | Public Relations | ✓☐ | Transport |
| ✓☐ | Husbandry | ☐ | Recapture |  |  |

 |
| Training status |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ☐ | Abandoned | ☐ | Maintaining | ☐ | Regressed |
| ☐ | Completed | ✓☐ | Planned | ☐ | Re-training |
| ☐ | In Progress | ☐ | Postponed |  |  |

 |
| Trained at |  |
| Training Start Date: |  |

(Below to be copied into the Details box on ZIMS):

|  |  |
| --- | --- |
| ZIMS ID and Animal Name |  |
| Species | Rodrigues fruit bat ***pteropus rodricensis*** |
| Training Location | Vet department rabies quarantine |
| Primary trainers |  |
| No. of trainers required per session | 1 |
| Protected or free contact |  Free |
| Key species information | * *Pteropus* species that live on small islands have a low basal metabolic rate, researchers note low basal metabolic rates indicate lower energy needs
* Roost in trees or open shelters
* Acute hearing, good sense of smell, excellent vision; visual acuity similar to that of a cat (Schwab & Pettigrew 2005)
* In a study of three *Pteropus* species, photo receptor cells allow limited colour vision (Müller et al 2007); can see red (Wang et al 2004)
* Receptors in the retina are sensitive to UV light (Wang et al 2004) (Zhao et al 2009)
* Teeth elongated and flat for chewing fruit - stomach is large and complex, small intestine long and looped, provides area for absorption of fruit nutrients
* Crepuscular/nocturnal - at dusk fly to fruit trees to feed.
* Foraging areas well removed from roosts
* Roost on higher trees that rise above forest canopy
* During daylight bats typically move about the roost site
* Males and females in captivity show aggression towards intruders in their territory (Carroll 1979)
* Not strong flyers but can take off from ground
* Historically, introduced ripe tamarind pods and mangoes were favored foods (Cheke & Dahl 1981)
* Other food items: (Cheke & Dahl 1981)
	+ *Eugenia jambos* (rose- apple) flowers and fruit
	+ *Pandanus*
	+ Palm fruit
* Food intake may be as high as 2.5 times body mass. (Dempsey 2004)
* Maximum life span for captive *Pteropus:* 31 years (Pierson & Rainey 1992)
 |
| Individual/group history | Check ZIMS but only 7 females remaining  |
| Other animal information (behaviour, environment, medical) | * Have a fear of keepers due to frequent recent catch ups although this does not appear to have generalised to fear of the environment itself.
* They display aversive reaction to entering the enclosure – rapidly moving away from the person who enters and failing to interact with food items or enrichment until the keeper has left the enclosure.
* Preliminary trials indicate that water melon is the favoured food item. Three sessions of adding this to the enclosure then removing after 15 minutes resulted in all bats moving towards the suspended feeding device and bowls on the fourth attempt.
 |
| Enclosure | * Current housing is a simple, functional den facility: four walls, no exposure to elements, poorly lit and minimal cage furnishings.
* The aim is to house the group within the enclosure in the rainforest with several other species in a walk through enclosure.
 |
| Tools | Audio recall device (shaker), possibly modified crate if potential for training is proved |
| Primary Reinforcement | Water melon/papaya/other succulent fruits |
| Cues | Audio recall device  |
| Shaping plan  | **Ideal behaviour portfolio:** Desensitise to keepers, audio recall, hand feed, crate training, weighing, physical exam**Step one: motivating operations** –This process is designed to ensure desire for the chosen reinforcer (in this case melon). Following one day without melon being offered at all, they should only be offered it when a keeper is present, If they refuse to eat it while keepers are in the enclosure it is removed until the next session. The amount of melon offered needs to be replaced by a lower value food item in the main diet.**Step two: desensitise to keepers** – Place the melon in feeding devices that can be hung at the highest level of the enclosure within close proximity to the group. Sit in the corner of the enclosure for no more than 15 minutes during which they have the opportunity to feed. Remove the melon when you leave the enclosure.**Step three: inserting audio cue -** Once all the bats are moving towards the feeders within a short time of being hung up, begin to sound the recall device as they approach to feed. It is very difficult to target individuals so a continuous sound during the feeding process, with emphasis on when individual bats are just about to feed, is favourable. **Step four: hand feeding –** after a period of conditioning to the audio cue, the keeper station (log) should be moved gradually towards the feeding station. Over a period of a few sessions it should be moved closer until it is directly beneath the feeders. Then, the keeper should remain standing after hanging the feeders, once they are comfortable with this then the keeper should start to hold the feeder instead of hanging it. After all the bats will approach the feeder to eat, hand feeding can be attempted**.** **Step five: cued recall –** Holding the feeder, (or the melon if they are very relaxed about hand feeding), at a different location to normal, lure the bats towards it to feed. When all the bats are approaching relatively swiftly remove the lure and use the audio recall to stimulate the behaviour of moving toward the keeper. Reinforce with melon.**Step six: crate training – the likelihood of this and any other behaviours will be assessed during the next two weeks** |