Plan of Safeguard – Environmental & Ethical Handling

Project title - **Distribution and assessment of the population status of Critically Endangered Kondana Soft-furred Rat *Millardia kondana*, with special emphasis on implementation of the conservation management plan at Sinhgad.**

1. The trapping of the species for molecular, taxonomical and ecological investigations

This study involves live trapping of Kondana Soft-furred Rat; the animals will be trapped – tagged – released. It does not involve the collection of the specimens, except if they found dead or died during process of trapping and handling. Therefore, it seems rational that this activity will not cause any detrimental impact on the environment, but it may be touches some ethical issues those should be taken into account while conducting this study. Considering conservation status of the species, Critically Endangered, the following protocol, based on widely accepted 'Guidelines of the American Society of Mammalogists for the use of wild mammals in research', is prepared to minimise the damage/stress during handling the species (Sikes *et al.* 2011). (Appendix 1)

1. Live trapping will be carried out using Sherman traps and they are made up of metal; therefore, rats easily suffered from thermoregulatory stress. This stress can be minimizedby providing an adequate supply of food and nesting material in the live trap. Insulation can be accomplished by using such items as cotton or synthetic fibre batting, leaves, or twigs to provide dead air space between the animal and conducting surface and to provide escape from the temperature extremes.

2. The species of interest is nocturnal; therefore, the traps will be set before dusk and checked at dawn. If traps are kept during the daytime also then care should be taken that they must be closed to avoid trapping of diurnal non-target species. The sampling spots where traps set will be flagged to be ensured that all traps visited regularly, to minimize mortality or injury to the animals in live traps and recovered them efficiently.

3. The rats will be anesthetized before ear tagging and collection of tissue sample for DNA studies. Anaesthetic ether would be used for this purpose and small piece of tissue will be removed from tail tip of the rat with causing minimum damage and stress. After tissue

collection and prior to release, individuals should be observed to ensure that no trauma or adverse reaction has occurred as a consequence of capture, handling, or tissue removal.

4. The rats trapped in sampling subunits, of an area less than 1ha, in each site will be marked and released. Based on our previous experience, we are expecting that handling of the specimens will not exceed 150-200 individuals, include all three sites. The tissue samples collected from the number of individuals will not exceed 20, form all sampling sites.

5. This study will involve the trapping and tissue collection causing minimum stress and injury to the species, but in case of severe injury they will be euthanized. The most humane method suggested in a guideline provided by Sikes *et al.* 2011 will be followed. The preferred method would be cervical dislocation after anaesthesia due to its effectiveness in field conditions.

6. Tissue samples of euthanized animal will be collected, preserved and deposited in the collection of the BNHS for DNA, endoparasitic and histological studies. The samples will provide to the other institutes if they request for further investigation on the species. Voucher specimen of euthanized animal will be prepared and deposited in the BNHS collection.

References

Robert S. S, William L. G and the Animal Care and Use Committee of the American Society of Mammalogists. (2011). Guidelines of the American Society of Mammalogists for the use of wild mammals in research. *Journal of Mammalogy*, 92(1):235–253.