

## IL260 Effects of forest disturbance on Buton Macaque behaviour

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In comparison to other Sulawesi macaques very little is known about the distribution or conservation status of the booted, *M. ochreata ochreata*, and Buton macaques *M. o. brunnescens*. Moreover there are few captive Buton macaques, and no captive breeding programme. The Buton macaque is endemic to the islands of Buton and Muna. Both islands have undergone extensive de-forestation in recent years, due to logging and farming, and these macaques are consequently under threat. Muna has lost the majority of its primary forest, and the largest population of macaques survives on Buton. The Lambusango and Kakenauwe forest reserves in central Buton island represent a substantial remaining stand of forest and may support the largest remaining population of this endemic species.

There is a paucity of information available regarding the behaviour and ecology of the Buton macaque and indeed the wild Sulawesi macaques in general. Information on the ecology and behaviour of Buton macaques, in addition to that on population, is essential for successful management plans to be designed to conserve this endemic primate. Further, specific data on habitat requirements, minimum areas for conservation, diet, and details of appropriate social and breeding systems are necessary for the implementation of such plans. Data on key food resources and habitat features are essential to allow recommendations of areas suitable for conserving macaques. In addition, macaques are seed dispersers, and as such are important agents of forest regeneration. Knowledge of food resources is essential in understanding habitat and food resource needs of these macaques for their continued survival.

There are three semi-habituated troops of macaques used for behavioral research - one in a forest/farm matrix, one in disturbed forest and one in relatively undisturbed forest. Group sizes of these troops vary from under 20 individuals to over 50 and they live in multi-male, multi-female groups. This variation in group size is particularly interesting and is both impacted upon by forest fragmentation and in turn impacts on home range and foraging behaviour. Macaques are particularly interesting as they are semi-terrestrial, generalised frugivores and extremely adaptable to habitat change as a result they are able to utilise human-modified environments, such as farms.

The utilisation of crop-raiding strategies and inclusion of "human" food resources in the diet of primate groups can have a significant impact on activity budgets. Crops usually have a higher nutritional value per unit, are spatially and temporally clumped and predictable. These factors mean that metabolic requirements may be met faster which leads to improved foraging efficiency for primates. Thus changes in activity budgets may be witnessed in terms of decreased feeding time and increased time spent resting or socialising. These differences may not, however, be consistent across age-sex classes owing to differing energetic requirements and differing levels of willingness to expose themselves to the "risk" of entering farms e.g. lactating females have been known to crop-raid less frequently than other age-sex classes. In addition, utilisation of crops also impacts on ranging behaviour and home range size.

Troop follows of these 3 habituated troops with differing levels of crop utilisation (from high to none) will be used to investigate the impact of crop-raiding on the Buton Macaque. Using instantaneous scan sampling behaviours will be recorded throughout the day and GPS readings will be taken to record ranging behaviour. Recordings will also be made of forest and non-forest foods being eaten and during troop follows records of all fig trees will be taken (noting whether they are in fruit or flower). A variety of other projects can also be conducted on these troops including investigations into the behavioral responses to disturbance in terms of overall activity budget, or a specific focus on feeding behaviour between the troops. The impact of habitat differences on levels of aggression or the types and frequency of social behaviour could also be investigated. Home range data will also be collected and can be related to habitat factors. Data will be collected through scan sampling and comparisons made between age and sex classes of monkeys as well as between the troops.

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