

## Community Perceptions of Free-Roaming Dogs and Management Practices in Villages at the Periphery of a Protected Area in Bhutan

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### ABSTRACT

*In Bhutan, free-roaming dogs pose health hazards to human, livestock, and wildlife. Understanding the perceptions and practices of local communities regarding free-roaming dogs is important to mitigate negative impacts. A community-based study was conducted in the buffer zone of Strict Nature Reserve, western Bhutan. The study was conducted in February-October 2018 using a household questionnaire survey, ‘free-listing’ of dog diseases, group discussions and key-informant interviews. A total of 140 households from Katsho and Esue geogs (sub-districts) were interviewed. People classify dogs under three categories: ‘Gokhi’/pet dog, ‘Changkhi’/stray dog, and ‘Shakhi’/feral dog. A higher proportion of rural people owned pet dogs, which were considered important to guard crops and livestock from wildlife and protect households’ properties. Owning a dog also contributed significantly to the non-material well-being of the respondents, especially in the rural villages. In contrast to the perceived positive impacts of the pet dogs, 81% of the respondents considered stray and feral dogs a problem in the community. The threats were attacks/bites by free-roaming dogs to humans, livestock and also wildlife. Rabies was the most frequently (69.7%) known dog diseases with the highest rank (1.46) in the list, followed by scabies (49.5%, rank 1.52). The majority (56%) of the respondents indicated that stray and feral dogs originate from abandoned pet dogs. This study calls for a multi-sectorial/One Health*

***approach to mitigate the threats posed by free-roaming dogs and more detailed ecological and epidemiological studies are required to control their impacts.***

**Keywords:** Free-roaming dogs, Perceptions, Livestock, Protected areas, Bhutan

## INTRODUCTION

The dog (*Canis familiaris*) is currently one of the most widespread human commensals throughout the world (Larson and Burger, 2013). Dogs provide a number of material and non-material services to people such as, being a pet or a guide for the blind people, guarding livestock, crops and properties, assisting in hunting and search-rescue operations (Woodward, 2001; Winkle et al., 2012; Blouin, 2013). Based on the dependency of dogs to humans for food and shelters, they can be classified as, i) ‘pet dogs’, which completely depend on humans for food and are confined at least part of the time, ii) ‘free-roaming dogs’ that depend on humans in part of their food supply only, and iii) ‘feral dogs’ which are completely independent from humans (Slater et al., 2008; Blouin, 2013). Beside many positive aspects of the domestic dogs, there are some negative impacts for public health, livestock and wildlife health, especially in areas where uncontrolled dog populations roam freely (Boitani and Ciucci, 1995; Slater, 2004; Young et al., 2011; Acosta-Jamett et al., 2015). Including rabies more than sixty zoonotic diseases are associated with dogs (Macpherson et al., 2000; Czupryna et al., 2016). Dogs also threaten endangered wildlife species through predation and transmission of infectious diseases such as canine distemper virus (Hughes and Macdonald, 2013; Sepúlveda et al., 2015; Ward et al., 2015; Lessa et al., 2016)

Bhutan has more than 70% of the territory under forest cover and human settlements are located within the forests, inside the national parks’ boundaries and also in buffer zones of the parks (Choden, 2016). There are large numbers of free-roaming dogs in the country and they are associated with human settlement and urbanization (Tenzin et al., 2012). Dog mediated rabies has been identified as one of the main zoonotic disease that pose public health risk in Bhutan (Tenzin et al., 2011; Tenzin and Ward, 2012). Besides, sero-positivity to Canine Distemper Virus, Canine Parvo Virus and Canine Leptospira has been documented in domestic dogs in Thimphu city area (Rinzin, 2015), although no dog-mediated diseases have been reported in wildlife to date (Dorji et al., 2011). Therefore, understanding the ecological and epidemiological impacts of domestic and feral dogs at human-livestock-wildlife interfaces, including disease transmission risks and community knowledge, attitude and practices on dogs within the protected areas, is important for making science-based policy decisions. This paper reports the results of a survey on the community knowledge, perceptions and practices in rural and semi-urban communities towards dogs and their negative impacts in the periphery of Haa Jigme Khesar Strict Nature Reserve, Western Bhutan.