

Communication in Dholes (*Cuon alpinus*):
The Ethogram, Vocal Repertoire and Functions of Call Types

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The dhole (*Cuon alpinus*) is an endangered pack-living canid species living in India, Southeast Asia, China, etc. They were reported to vocalize frequently both in the wild and captivity, but the function of each call type has not been understood yet. This research aimed to construct their ethogram and vocal repertoire to estimate the function of each call type by analyses of the relationship between each call type and behavior. We recorded behaviors and sounds of 15 captive animals in total at zoos in Japan, Singapore and India and of wild animals at Mudumalai Tiger Reserve, India. The total recording times were approximately 216 hours in captive animals and 2 hours in wild animals during the period from May 2010 to December 2011. The recorded behaviors were classified into 134 behavior patterns of 15 categories. The recorded vocal sounds could be classified into 13 call types containing a newly identified call type. The analysis of the relationship between each call type and behavior suggested that the bark call, squeal call and whistle call have a function of a threat/alarm call, submissive call and contact call used in communication among the same pack, respectively.