

**COOPERATIVE BREEDING BY BUFF-THROATED  
PARTRIDGES (*TETRAOPHISIS SZECHENYII*): A CASE IN  
THE GALLIFORMES**

**Yu Xu<sup>1,2</sup>, Nan Yang<sup>1</sup>, Kai Zhang<sup>1</sup>, Bisong Yue<sup>1</sup>, Jianghong Ran<sup>1,3</sup>, and  
John Carroll<sup>2</sup>**

<sup>1</sup>*College of Life Sciences, Sichuan University, Chengdu 610064, China*

<sup>2</sup>*D.B. Warnell School of Forestry and Natural Resources,  
University of Georgia, Athens GA 30602*

<sup>3</sup>*Corresponding author. rjhong-01@163.com*

**Abstract:** Cooperative breeding has not been reported among the Galliformes. Here we report a case in Buff-throated Partridges (*Tetraophasis szechenyi*), a sexually monochromatic Galliformes species endemic to western China. During the breeding season, we made behavioral observations of pairs and groups. A total of 68 settled groups were observed during 4 years (18 in 2006, 16 in 2007, 17 in 2008, and 17 in 2009). Groups were comprised of a breeding pair and in 64.7% (44/68) of groups, up to 3 helpers of either sex (but predominantly male). Groups also included single broods if present. Group structure was usually stable within the breeding season, but changed from year to year due to individual turnover and dispersal or death between years. Helpers were assumed to be the previous year's offspring of either the breeding pair or one of the breeding pair, and they were less assiduous than the breed pair in terms of breeding efforts. Breeding success did not differ significantly between groups with at least one helper (34.1%, 15/44) and unaided pairs (20.8%, 5/24), nor did we detect a significant correlation between group productivity and the number of helpers. We suggest that helpers are more likely to gain direct fitness benefits in this species, and that the occurrence of this behavior is an occasional phenomenon in the Galliformes, which might be derived by particular ecological conditions. For this species, this behavior may be a response to low overall recruitment during breeding season and higher survival of individuals in groups.