Damage to paddy *Oryza sativa* by Indian Peafowl Pavo cristatus near Chulannur Peafowl Sanctuary, Kerala, India

Suresh K. Govind & E. A. Jayson

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Suresh K. Govind, Assistant Professor, Department of Psychology, Christ College, Irinjalakuda, Thrissur 680125, Kerala, India. E-mail: sureshavinissery@gmail.com [Corresponding author]

Jayson E. A., Head of Department Wildlife, Kerala Forest Research Institute, Peechi, Thrissur 680653, Kerala, India. E-mail: jayson.58@gmail.com Manuscript received on 06 April 2018.

Introduction

India's national bird, the Indian Peafowl Pavo cristatus (henceforth, peafowl), is listed under Schedule I of the Indian Wildlife (Protection) Act, 1972, and in Appendix I of the CITES treaty. It is omnivorous and gregarious, and is seen in open, and deciduous forests, different types of plantations, and human habitations (Ali & Ripley 1980; Grimmett et al. 2011). It faces the threats of poaching for its meat, feathers, and for use in traditional medicines. Accidental poisoning is another major threat (Alexander 1983; del Hoyo et al. 1994; Chakkaravarthy 2002; Ramesh & McGowan 2009). Crop depredation by peafowl is a serious issue, and has been reported from some areas in India (Johnsingh & Murali 1980; Veeramani & Jayson 1995; Ogra & Badola 2008; Karanth et al. 2012; Pradhan et al. 2012). As the actual economic loss was not estimated in these studies, farmers could not claim ex-gratia payment from the wildlife authorities. The situation will be exacerbated when the wildlife authorities prioritise the needs of wild animals above the needs of humans (Madden 2004). Quantifying the damage, and immediately disbursing sufficient ex-gratia to the victims could ameliorate the human-animal conflict (Nyhus et al. 2003). In India, as mentioned above, no studies have been conducted to measure the extent of crops that peafowl damage. In this paper, an attempt has been made to study the human-peafowl conflict, with the objective of estimating the extent of paddy Oryza sativa damaged, by peafowl, near the Chulannur Peafowl Sanctuary, Kerala, India.

Study area

The Chulannur Peafowl Sanctuary (10.70°-10.73°N, 76.45°-76.48°E; henceforth, CPS) is located near Thiruvillvamala village, and comprises 3.42 km² of forests spread over the districts of Thrissur, and Palakkad (Fig. 1). The area was declared a sanctuary in 2007. Its deciduous forest, with open areas and rocky patches, offers an ideal habitat for peafowl.

Methods

We assessed the consumption of paddy, by peafowl, using the enclosure experiment of Wilson et al. (2009), which we conducted in the paddy fields adjacent to CPS. This was part of a detailed study on human-wildlife conflict in central Kerala, from



Fig. 1. Chulannur Peafowl Sanctuary, Central Kerala, India

April 2009 to March 2012.

Plots of paddy were enclosed within net-covered metallic frames (10 m x 10 m) to protect them from damage [166]. They functioned as our control plots. Paddy depredation was quantified by comparing the yield of paddy from the control plots, with that of the open plots (10 m x 10 m). Two control plots, and two open plots were monitored in four trials in December 2009, September 2010, December 2010, and September 2011, at different locations of CPS. The mean distance from the forest boundary to the area of experiment was 112.5 ± 47.87 m.

Results

Peafowl were observed feeding on paddy at dawn (0600-0900 hrs), and dusk (1600–1900 hrs), over a total time of observation of 395 hours. The birds consumed the paddy by stripping off the grain from the panicle with their beaks. The mean daily