D-15: Population estimation of sambar deer *(Cervus unicolor unicolar)* in the Horton Plains National Park

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The spot light transect technique developed by Davis (1982) and Flyn *et al*, (1988) was adopted to count the animals as the direct method. Counts of the animals were made on 5 days per month during the period March 1991 to June 1991 both months inclusive. Counts were made between 17 00 h - 05 00 h along 11/2 km length of the Pattipola road. Five transect lines were run at 17 00 h, 20 00 h, 23 30 h, 03 00 h and at 05 00 h per day.

The population for the entire area was calculated using a standard formula, given by Davis. As it was assumed that the sambar at Horton Plains are predominantly grazers, ecological and crude densities were calculated separately.

Estimated total population was 1369+157. The crude density was 43.3/km^2 and the ecological density was 143.42/km^2.

Faecal Accumulation Rate method was used as the indirect method to find the population. Three study areas within the National Park were randomly selected for the establishment of sampling plots. The plots were laid according to Eisenberg *et al* (1970). Each plot measured 100 m x 50 m. Pellet study commenced in March 1991 and ended in June 1991.

The counts were made on 5 days per month, on alternate days during a single stretch of 10 days. The total number of sambar was calculated using the method given by Davis.

The total population estimate using pellet count data resulted as 1,583 with fiducial limits of 1,766 and 1,385, at 75% confidence level with 10% sampling error when d.f = 59.

The closeness of the 2 values by these 2 methods indicate the compatibility of the 2 methods.

Indirect method was used as a preliminary population monitoring technique as part of the future planning and management programmes, and also as a parallel method to line transect assessments.

Monitoring of the population should be done continuously for a few years in order to examine trends within the National Park.