**Population structure and annual migration pattern of Steppe Eagles at Thoolakharka Watch Site, Nepal, 2012-2014**


## ABSTRACT

We studied the east-to-west migration of the endangered Steppe Eagle (Aquila nipalensis) in Nepal at Thoolakharka (elevation 2050 masl) from mid-September to early December 2012 – 2014, to estimate the age structure of the population and describe its annual migration pattern. We counted 6100 to 8700 individuals/year, and aged approximately 60% of the eagles that passed: 20% juveniles (902), 37% subadults (1679) and 43% adults (1910). We observed the bulk (67%) of eagle migration after 1200 H, with a peak between 1400 – 1500 H. For these 3 yr, the median passage date of juveniles was earlier than the median passage date of subadults and adults. The proportion of different age classes in 2012 was significantly different from that in 2013 ($G = 18.4$, $P < 0.001$) and 2014 ($G = 147.4$, $P < 0.001$). There were no significant differences among years in the number in each age class ($\chi2 = 1.655$, $P = 0.437$; $\chi2 = 1.125$, $P = 0.570$; and $\chi2 = 3.240$, $P = 0.198$, respectively for juveniles, subadults and adults), however median of the number of total migrating Steppe Eagles counted each year were significance different ($\chi2 = 6.318$, $P = 0.042$). We did not see a difference in the yearly migration pattern of Steppe Eagles but we observed high proportion of juveniles earlier, adults later in the season and also fewer Steppe Eagles passing through the area than previous short-term studies had estimated.



**Keyword**: Steppe Eagle; Aquila nipalensis; Count; Himalaya; Migration; Population structure; Thoolakharka; Watch site