



Prospecting forays inform young Golden Eagles prior to emigrating from their natal home range

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Despite being the top avian predator in many northern upland ecosystems relatively little is known about the behaviour of Golden Eagles *Aquila chrysaetos*, especially during the lengthy period between fledging and subsequent settlement at a breeding site, when the primary dispersal behaviours occur. In most birds the dispersal process is usually initiated with a straight emigration from the natal site and the cessation of parental care. Yet for some species, particularly those with extended periods of parental care (such as many large raptors like Golden Eagles), individuals can carry out prospecting movements prior to dispersing. Prospecting behaviour probably involves individuals searching and evaluating sites, and may influence further decisions made at later stages of the dispersal process.

We used long-life GPS satellite transmitters fitted to 24 nestling Golden Eagles to follow them as they dispersed. Young Golden Eagles emigrated from their natal home ranges from 44 days until 250 days after fledging. The rate at which individuals emigrated increased over time and individuals that developed motility more rapidly also emigrated earlier. Twenty-two individuals made at least one distinct movement away from the natal home range prior to emigrating, with early departing individuals making fewer prospecting trips prior to a definitive departure. Individuals that prospected undertook up to 11 prospecting loops that lasted up to 10 days and with longer duration trips being longer in overall length and maximum distance explored from the natal home range. The direction of prospecting forays was positively correlated with the direction of eventual departure, but the penultimate exploration was no more correlated than less recent explorations, indicating a non-random exploration direction.

We therefore provide evidence that with a high variation in emigration timing and propensity to prospect, young Golden Eagles probably make highly informed decisions early in the dispersal process. We speculate on the reasons why there is such wide variation in this exploratory process, that most likely gathers information on the environment into which, subsequently, young Eagles venture as independent individuals.