

Spatial consequences of relatedness and age in buzzards

Walls S.S. and Kenward R.E. 2001. *Animal Behaviour* 61: 1069-1078

Biologists play an ever-increasing role in providing tools to help manage our countryside. These tools are formalised in models and it is now apparent that including the behaviour of organisms can improve our understanding. However, even small inaccuracies about dispersal and ranging behaviour can result in poor predictive value. False assumptions are sometimes made because accurate empirical data can be difficult to obtain in the field. Here we show how an objective analysis of sociality can shed new light on common assumptions. We radio-tracked 146 buzzards (*Buteo buteo*) from fledging for up to four years. In their first year, distances of buzzards from the nearest nest were least if it was their natal nest ($P < 0.002$). To determine if this was association with their own nest, or dispersed birds avoiding other nests, we compared observed buzzard locations with random locations within a predefined distance from nests. There was strong association of buzzards with their own nests in their first autumn ($P < 0.001$) and winter ($P < 0.05$), but significant avoidance of other nests was not demonstrated. In their first autumn, neighbouring sibling buzzards had closer activity centres ($P < 0.002$) and had a greater tendency to overlap their home ranges than non-siblings. However, both effects disappear with age: core ranges, that include the densest 90% of locations, become strongly exclusive in older buzzards. Such detail must be accounted for when building models, which are especially valuable for wide-ranging species.