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The welfare continuum from wild to managed deer

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Consideration of the welfare of wild animals including deer has received relatively little attention compared to animals in managed situations, where a considerable body of information is accumulating. This information allows us to begin to make informed decisions about the welfare of farmed animals but how should the welfare of wild or ranged animals be evaluated? When human intervention occurs in an overt way, such as during translocation, the paradigms used to describe domestic animal welfare can be applied (for example by reference to the UK Farm Animal Welfare Council's "five freedoms"). Under other circumstances, the five freedoms may not provide such a useful framework to describe the wellbeing of wild deer where we need to take, as the starting point, animals in an undisturbed natural environment. Here it may be more appropriate to consider "restrictions" imposed upon animals as, for example, human activity encroaches on their environment. A complication is the need to employ scientific methods that do not impose any sampling artifact on the wild subjects. The utility of behavioural observations, faecal corticoids, morbidity and mortality data (including biochemical measurements made *post mortem*) and information on population dynamics to form the basis for animal welfare assessments will be discussed.

The welfare of farmed deer during routine management

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Farmed red deer (*Cervus elaphus*) are often managed in extensive systems and contact with stockpersons may be less than that which occurs in other livestock enterprises. As well as reducing the ease with which animals may be managed, increasing the chance of human or animal injury, this lack of contact may mean that when animals are handled for routine management purposes the procedures may be more stressful to them. Our hypothesis was that by altering the way in which the deer are managed in the long-term we could reduce their reactivity to acute procedures. Following the imposition of three different post-weaning management regimes (essentially different levels of human exposure), deer were subjected to acute management procedures. There were effects of the management regimes on both behavioural and real-time physiological responses (for example animals which had received more handling previously showed a reduced physiological response to acute procedures). Results of repeat testing of deer on up to three occasions suggested that while behavioural responses were not affected, there was nevertheless a physiological effect of exposure to acute procedures. The practical implications of the findings for deer welfare will be discussed.