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## **Behaviour and welfare: the visitor effect in captive felids**

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### **Abstract**

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*The influence of visitors on the welfare of captive animals, known as the visitor effect, may in some instances be stressful, adversely affecting animal health. Although the survival of many felid species depends on captive breeding programmes, little is known about this effect. A better understanding of the visitor effect is required to ensure the well-being of felids and the success of breeding programmes. We sought to determine whether the presence of visitors affects behaviour patterns and space use in five feline species in two Spanish zoos: Eurasian lynx (*Lynx lynx*), jaguar (*Panthera onca*), bobcat (*Lynx rufus*), ocelot (*Leopardus pardalis*) and Asiatic lion (*Panthera leo persica*) and, if so, whether the effect on animal welfare is positive or negative. To our knowledge, no previous research has addressed the visitor effect in these species, with the exception of the jaguar. Data on animal behaviour, enclosure use, and visitor density were collected during the spring and summer of 2011 and 2012. Changes were observed for all studied species when the zoo was open to the public: four species devoted less time to complex behaviour (ie play, walk) and spent more time resting; ocelots and bobcats made more use of hidden spaces and less use of areas closer to visitors, while the jaguar tended to do the opposite. No correlation was found between visitor density and animal activity, indicating that animals are affected by the mere presence of visitors, regardless of their number. Our findings are in line with those reported by other authors, who have suggested that these behavioural changes are linked to chronic stress. Visitor effect was classed as negative for the welfare of all studied species apart from the jaguar. We advocate the need for future research into potential solutions to mitigate the adverse effect of visitors on felids.*

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**Keywords:** animal welfare, felids, space use, stress, visitor effect, zoo