Changes in animal behaviour have been widely used as a welfare leading to chronic stress (Hosey 2000; Davey 2005). Tool to evaluate zoo animal welfare. Numerous studies of ical responses of animals in the presence of zoo visitors (Davey environmental enrichment) or negative, when it harms animal (2006a). This influence has been classed as positive (a form of the visitor effect, mostly among primates, have reported adverse effects range from an increase in aggressive behaviours (Maki et al 1987; Chamove et al 1988; Mitchell et al 1992; Cook & Hosey 1995; Wormell et al 1996; Lambeth et al 1997; Anderson et al 2002; Simpson 2004; Wells 2005), hiding behaviour (Birke 2002; Condon et al 2003), vigilance time (Clark et al 2012; Larsen et al 2014; Quadros et al 2014), and abnormal stereotypies and/or self-directed behaviours (Mallapur et al 2005; Wells 2005), a decrease in affiliative behaviours (Glatson et al 1984; Chamove et al 1988; Simpson 2004), or an increase in glucocorticoids (Carlstead & Brown 2005; Davis et al 2005; Todd et al 2007; Piñarré et al 2012). However, there have also been some studies in which the visitor effect is neutral for the studied species (Fa 1989; Nimon & Dalziel 1992; Mather 1999; Choo et al 2011; Sherwen et al 2014).

Although recent years have seen more research in non-primates, such studies remain scarce. A number of authors (Hosey 2000; Davey 2007; Fernández et al 2009) have highlighted the need for research focused on other animal groups. There are few feline studies in the literature on visitor effect and results are variable, providing a rather confused picture varying from no response to an apparent stressed response. Mallapur and Chellam (2002) observed a decrease in activity in leopards (Panthera pardus) when the zoo was open to the public; Wielebnowski et al (2002) found in clouded leopard (Neofelis nebula) that the concentration of faecal glucocorticoid metabolites was higher for individuals housed in exhibit compared with those individuals off exhibit; and,