The Old School, Brewhouse Hill, Wheathampstead,
Hertfordshire AL4 8AN, UK
www.ufaw.org.uk

Animal Welfare 2015, 24: 437-446
ISSN 0962-7286
doi: 10.7120/09627286.24.4.437

Hormonal and behavioural stress responses to capture and radio-collar fitting in free-ranging pampas deer (Ozotoceros bezoarticus)

MS Munerato[*†], *JA Marques*[†], *NA Caulkett*[‡], *W Tomás*[§], *ES Zanetti*[#], *RG Trovati*[¶], *GT Pereira*[¥] *and R Palme*[¤]

[†] Department of Clinical and Veterinary Surgery, Faculty of Agrarian and Veterinary Sciences, São Paulo State University (FCAV-UNESP), Via de Acesso Professor Paulo Donato Castellane s/n, Jaboticabal - SP, 14884-900, Brazil
[‡] Department of Clinical and Diagnostic Sciences, Faculty of Veterinary Medicine, University of Calgary HM 383, 3330 Hospital Drive, North-West Calgary T2N 4N1, Canada
[§] Wildlife Laboratory, Brazilian Agricultural Research Corporation (Embrapa Pantanal), CP 109, Corumbá, MS, 79320-900, Brazil
[#] FCAV-UNESP, Deer research and Conservation Center (NUPECCE)
[¶] Department of Ecology, 'Luiz de Queiroz' College of Agriculture (ESALQ-USP), Av Pádua Dias, 11, Piracicaba - SP, 13418-900, Brazil
[¥] Department of Exact Sciences, FCAV-UNESP, Via de Acesso Professor Paulo Donato Castellane s/n, Jaboticabal - SP, 14884-900, Brazil
[¤] Department of Biomedical Sciences/Unit of Physiology, Pathophysiology and Experimental Endocrinology, University of Veterinary Medicine (Vetmeduni), Veterinärplatz 1, A-1210 Vienna, Austria
* Contact for correspondence and requests for reprints: marinamunerato@gmail.com

Abstract

*This study evaluated the short-term hormonal and behavioural responses to capture and radio-collar fitting in free-ranging pampas deer (*Ozotoceros bezoarticus*). Twenty adult deer (eleven females and nine males) were captured in the South Pantanal wetland (Brazil) and equipped with VHF radio-collars (marked deer). Untreated adult deer of the same sex were randomly chosen as the control group (nine females and nine males). On the day following capture, an observer followed all deer for faecal collection and behaviour evaluation. Faecal samples were immediately refrigerated and frozen at –20°C within a maximum of 12 h. Faecal glucocorticoid metabolites (FGM) were measured using an 11-oxoaetiocholanolone enzyme immunoassay. A qualitative behaviour assessment and the consequences of capture were evaluated using pre-defined terminologies and scores. Flight distance was recorded using a range finder. FGM increased from 19–22 h after capture onwards and peak concentrations were five times (median) higher as the respective baseline values. FGM values of marked deer were significantly higher at 22–25 and 25-28 h compared with controls. Marked male but not female deer had significantly higher FGM values at 22–25 and 25–28 h compared with their baseline values. Marked deer were significantly more fearful, less sociable and defensive than controls. The absences of significant increases of FGM in the captured female deer may indicate that females are less prone to capture stress. The significantly more fearful, and less sociable and defensive patterns observed in marked deer may be relevant during capture of lactating females or in areas with high predator pressure.*

Keywords: *animal welfare, enzyme immunoassay, glucocorticoids, pampas deer, qualitative behaviour assessment, Southern Pantanal wetland*