

Prevalence and Patterns of Complex PTSD in Asian Elephants (*Elephas maximus*)

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ABSTRACT

Prior scientific analysis has demonstrated the presence of Post-Traumatic Stress Disorder (PTSD) in African elephants (*Loxodonta africana*) due to human activities (Bradshaw et al., 2005). However, only limited attention has been directed to the effects of captivity on elephant psychologically-mediated health. This is the first study to formally assess a population of captive-held Asian elephants (*Elephas maximus*) for psychophysiological symptoms of Complex PTSD (c-PTSD), a pervasive form of PTSD that arises from repetitive and prolonged trauma (Herman, 1992). Methodological tools validated for assessment of c-PTSD in nonhuman animals (Bradshaw et al., 2008; Capaldo & Bradshaw, 2009) were used to assess Asian elephants (N=53) during a two-month field study at two elephant sanctuaries in Thailand. Of these elephants, the majority of whom had previously been used for riding, street begging, logging, and/or circus-type shows, 74% exhibited symptom clusters of c-PTSD (Briere & Spinazzola, 2005). Symptoms of altered stress and emotional regulation (e.g. impaired socialization; severely diminished ability to regulate stress) and mood disturbances (e.g. anxiety; aggression) were exhibited by 53% of the elephants. 42% demonstrated hyper-vigilance or an overestimated sense of environmental danger, 38% showed avoidance or tension reduction behaviors (e.g., stereotypies; self-injury), and 34% exhibited post-traumatic stress (fear at a trauma-related stimulus). However, in post-trauma settings of sanctuaries who exercised principles reflective of trauma recovery, elephants who formed positive social bonds with mahouts and other elephants at these sanctuaries demonstrated partial alleviation of symptoms compared to their symptom profiles at arrival, suggesting the potential of the mahout-elephant relationship and the restoration of species-normative socialization as mechanisms of trauma recovery. Elephants who had experienced developmental traumas such as premature maternal separation exhibited the most persistent symptoms. This study offers an empirical analysis of the link between human cultural practices (different forms of elephant tourism) and elephant psychophysiology.

Keywords: *Trauma; Elephant; Tourism; PTSD; Psychology*

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