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Behavioural responses of Argentine coastal dusky dolphins (*Lagenorhynchus obscurus*) to a biopsy pole system

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Abstract

*In recent years, analysis of tissue samples has become a powerful tool in cetacean ecology since it provides information for effective conservation and management policies. Biopsy samples taken for such studies have been obtained by various means including crossbows, rifles, and pole systems. We investigated sampling success and the reaction of dusky dolphins (*Lagenorhynchus obscurus*) off the coast of Argentina to a biopsy pole system from 2008 to 2009. Using ad libitum behavioural sampling, we documented individual behavioural reactions to biopsy sampling immediately after a biopsy was taken. Log-linear models were used to determine whether there were significant differences in behavioural response for different group size, composition or behavioural context. In total, 109 sampling attempts were made and 58 biopsy samples were obtained (53.21% success rate). The intensity of individual response was influenced by group size and composition. Small groups (typically mother/calf) reacted more frequently than larger groups (generally mixed-age adults and juveniles). The behaviour of the animals prior to our approach for biopsy sampling also affected their response. Milling dolphins appeared to respond more intensively than dolphins socialising or travelling. In conclusion, biopsy sampling with the biopsy pole system presented here show generally mild and short-term reactions, though behaviour, group size and group composition affected the response. This information can be used to minimise the impact of biopsy sampling, and facilitate the collection of data critical to effective conservation strategies.*

Keywords: animal welfare, Argentina, behavioural response, biopsy pole system, dusky dolphins, *Lagenorhynchus obscurus*