



## Interpreting short-term behavioural responses to disturbance within a longitudinal perspective

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This presentation focuses on the pitfalls and (mis)-interpretations of controlled exposure experiments. I present results of short-term responses of dolphins to experimental disturbance exposures, and interpret these within a longitudinal perspective. Specially, I document immediate, behavioural responses of Indo-Pacific bottlenose dolphins to experimental vessel approaches in regions of high and low vessel traffic in Shark Bay, Western Australia. Experimental vessel approaches elicited significant changes in the behaviour of targeted dolphins when compared with their behaviour before and after approaches. During approaches, focal dolphin groups became more compact, had higher rates of change in membership and had more erratic speeds and directions of travel. Dolphins in the region of low vessel traffic (control site) had stronger and longer-lasting responses than did dolphins in the region of high vessel traffic (impact site). In the absence of additional information, the moderated behavioural responses of impact-site dolphins probably would be interpreted to mean that long-term vessel activity within a region of tourism had no detrimental effect on resident dolphins. However, a companion study, using fifteen years of data, showed that dolphin-watching tourism in Shark Bay has contributed to a long-term decline in dolphin abundance within the impact site. Those findings suggest that the documented moderated responses were not because impact-site dolphins had become habituated to vessels but because those individuals that were sensitive to vessel disturbance left the region before our study began. This reinterpretation of findings leads to questions of the traditional premise that short-term behavioural responses (e.g. controlled exposure experiments) are sufficient indicators of impacts of anthropogenic disturbance on wildlife.

**Wednesday February 20th at 11.15; Room 127,  
building 1131 (zoofys kaffestue)**