



Respiration patterns of right whales in Southern Brazil – are they affected by whalewatching boats?

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Whalewatching targeted at Southern right whales (*Eubalaena australis*) has been conducted in Santa Catarina State, the species' wintering ground in Southern Brazil, since 1999. To protect the whales' main concentration area in Santa Catarina, an Environmental Protection Area (RWEPA) was established in 2000. Studies to assess the potential impact of boat-based whalewatching have been conducted by the Brazilian Right Whale Project, analysing *inter alia* movement patterns, and no clear evidence of immediate disturbance has been observed. However, long-term impacts are difficult to assess and there is a potential for whalewatching growth as an uncontrolled activity if not properly managed. Studies involving respiration patterns can be used to understand whales' reactions to boat approaches. We here present a preliminary analysis of respiration rates sampled during 75.5 hours of shore-based theodolite tracking in 2006. The existing lack of data about right whales blow intervals during boat encounters make shore-based monitoring valuable for studying respiration patterns without disturbing the animals. Observations were made before, during and after (BDA) encounters with boats, and in no-whalewatching days. A total of 38 mother/calf pairs were monitored (12 in whalewatching days; 26 in no-whalewatching days). Mothers' mean respiration rate was 0.5 ± 0.3 blows/min during boat approaches, and 0.4 ± 0.2 blows/min in no-whalewatching days; calves' mean rates were 0.7 ± 0.5 blows/min during boat approaches, and 0.9 ± 0.5 blows/min in no-whalewatching days. There were no significant differences between rates during boat approaches and in no-whalewatching days, neither between BDA phases. While no immediate disturbance was found, these are preliminary analysis and more data should be included in order to properly characterize respiration patterns of right whales. Nevertheless, this can be baseline data for future studies related to a more comprehensive assessment of all possible disturbances in the RWEPA, in order to adequately assess the conservation status and propose further management measures for right whales in this area.