ISSN 1517-6770

Revista Brasileira de
ZOOCIÊNCIAS
8(2): 216, dezembro 2006

Respostas comportamentais de Baleias-Jubarte, *Megaptera novaeanglieae* (Borowski, 1781 Cetacea, Misticeti), submetidas à marcação por telemetria satelital

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Abstract. Behavioral responses of humpback whales, *Megaptera novaeanglieae* (Borowski, 1781 Cetacea, Misticeti), submitted to implanted sattelite transmitters. Tagging humpback whales, *Megaptera novaeanglieae*, with implantable satellite transmitters, created discussions about the possibility of disturbing the animals. Behavioral observations were conducted during tag deployment operations carried out off the Brazilian coast from 2003 to 2005, aiming to evaluate whale reactions to tag development. Observations were conducted from the flying bridge of a speed boat. Inflatable boats and 8-8m-long poles were used to deploy 28 transmitters. Submersion duration, respiratory frequency and behavior were registered using animal behavior sampling methods and a stop watch. The average speed was registered by GPS equipments in the inflatables. Comparisons between average respiratory rate, average submersion duration and average speed, before and after tagging, were realized. Average respiratory rate and speed were analised in 5 min intervals and also compared between each other, and tendency lines and equations were produced. Respiratory rate and speed predictions from 5 to 120min pursuing time were made. Acute responses to tagging were compared among themselves and behavioral reactions to pursuing were compared before and after tagging. Only non-parametric statistic tests were used to confirm the results. Escape routes and submersions were anlysed to describe possible patterns. Submersions were significant longer (N=15, p=0.009) before than after tagging. Respiratory rates were significantly lower (N=15, p=0.011) before than after tagging, as the average speed. Respiratory rates were positively correlated to the pursuing time at initial 30min (N=21, coeficient=0.886, p=0.019). After that moment, it was observed no correlation between pursuing time and speed (N=13, p=0.391). Correlation analysis showed that average speed and respiratory frequency, measured at 5min intervals until 30min, were positively correlated (N=26, coefficient=0.65, p=0.000). Acute responses significantly varied (N=28, p=0.000) among themselves, and 50% of the whales did not show response. Pursued animals presented an interspersed diving pattern, with long (>1min) and short (<1min) dives, and stabilization after tagging. Four escape routes patterns were observed: circular, undefined, directioned and mixed. Most of the groups (75%) did not show routes with defined direction, but only the escape necessity. Average speed, respiratory frequency and submersion duration significantly differed in the periods before and after tagging. Pursuing caused increases in the respiratory rate and average speed and decreases in the submersion average duration. Tagging procedures caused short-term acute responses on humpback whales. Behavior frequencies showed before tagging did not differed significantly from requencies showed after. Predictions can be used to create protocols. Tagging probably did not causes stress, because it is a very short duration and not repeated procedure. Despite that, tagging operations must be monitored to assure the welfare of the studied animals.

Keywords: Respiratory rate, average speed, animal welfare.