

## Estimating calving intervals, weaning age and calf survival of Blainville's beaked whales (*Mesoplodon densirostris*): Insights from individual life histories

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A long-term photo-identification study of Blainville's beaked whales (*Mesoplodon densirostris*) in the Bahamas has revealed information about the reproductive biology of this enigmatic species. From 1997 – 2007, 119 individuals were identified from high quality photographs, of which 47.8% were resighted. The high number of resightings for 8 adult females (mean 21.3 sightings, SD 10.2) and the short duration between resightings (mean 107 days, mode 1) allowed us to estimate calving intervals (length of time between births of surviving calves), weaning age (when the calf left its mother) and calf survival from photographs and direct observation. The age of each calf when it was first sighted was estimated based on presence of fetal folds, relative body length, pigmentation and amount of intraspecific and *Isistius* sp. scarring. Relative body lengths were measured from the anterior insertion of the dorsal fin to the blowhole for the calf and its mother when in the same photograph. Three calves known to be less than 1 month old were tracked for more than 2.5 years which helped define the criteria for estimating the age of the others. Birth dates were then assigned based on the date of the calf's first sighting and its estimated age at first sighting, and the date of the mother's last sighting before the birth. A mean calving interval of 3.7 years (SD 0.9) was found for 6 females that had 2-4 calves each. A mean weaning age of 2.7 years (SD 0.3) was calculated for calves resighted post-weaning, demonstrating known survival. Four calves disappeared before the minimum weaning age of known survivors so they were presumed to have died, resulting in a calf survival rate of 0.75 ( $n = 16$ ). The relatively low reproductive and calf survival rates found in this study should be considered when developing conservation strategies for this species.