How many bottlenose dolphins (*Tursiops truncatus*) inhabit the former Cres-Lošinj Special Marine Reserve, Croatia?

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Cres-Lošinj archipelago (Croatia) is a popular nautical tourism destination, important fishing ground and home to a resident bottlenose dolphin population. Previous study showed a significant decline in abundance of these dolphins between 1995 and 2003. This situation presents a conservation challenge that was tried to be tackled by declaration a Special Marine Reserve for dolphins in 2006. Protection lasted only three years and no conservation measures were put in force. We conducted a photo-identification study with the aim to estimate the number of bottlenose dolphins inhabiting the then proposed marine protected area and eventually inform the management. Dedicated boat surveys were conducted in a 525 km2 area between 2004 and 2011. A total of 440 sightings were recorded and 349 individuals were photo-identified, of which 54% were seen in four or more years and 6% were seen in all years. Many of the individuals encountered in this study were also regularly seen in the previous study (1995-2003) in the same area. Percentages of immature animals varied from 11% in 2007 to 20% in 2004 (mean=15.8%; SE=1.4). Capture histories of 181 individuals classified as "marked" were used to derive abundance estimates using the standard mark-recapture techniques and a closed model with Chao Mth estimator. Obtained abundance estimates varied significantly between years, with lowest value calculated for 2008 (N=112; CV=0.16; 95% CI=94-150) and the highest for 2006 (N=310; CV=0.12; 95% CI=265-392). Since our study area represents only a portion of this population's home range, these inter-annual variations are more likely reflecting shifts in habitat use within the home range rather than the actual changes in population size. This is supported by very low observed migration between this area and others in the Adriatic. Nevertheless, it raises concerns about the causes for these shifts and populations resilience to these causes.

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