

**Taphonomic variation despite catastrophic mortality: Analysis of a mass stranding
of false killer whales (*Pseudorca Crassidens*), Gulf of California, Mexico**

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ABSTRACT

A concentration of *Pseudorca crassidens* remains resulting from a mass stranding on the tidal flats of the Colorado River Delta, Baja California, Mexico, was analyzed to determine how bone and individual density and variation in taphonomic condition differs from a time-averaged assemblage of marine mammals. Five hundred and thirty seven skeletal elements, including 26 whole skulls, were found among 204 bone sites in a 13,000 m² area. Skulls provide the best estimate of minimum number of individuals; all other skeletal elements are underrepresented. Twenty bones per individual, one bone per 26 m², and one individual per 536 m² characterize this the mass-stranding locality. Bone density and individual density are greater at this locality than in a previously studied time-averaged assemblage from the Colorado Delta. Although the lack of variation in taphonomic condition is sometimes used as one criterion for a mass-death assemblage, the condition of the remains in this mass stranding varies both within and among skeletal elements. Teeth tend to be in good condition, earbones in fair condition, and vertebrae in poor condition. The taphonomic differences are a result of variation in the density and size of the skeletal element, variation in associated sediment (sand or mud), and variation in exposure (surface or buried). Despite the fact that all the individuals died at the same time, the taphonomic condition of their skeletal elements varies greatly.