

Malnutrition and gull harassment as possible causes of elevated calf mortality at Península Valdés, Argentina

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Southern right whale (*Eubalaena australis*) calves have been dying in large numbers (501 since 2005) at the Península Valdés (PV) nursery ground. Malnutrition, gull harassment, and several other potential causes have been considered. Malnutrition is plausible because cows in poor body condition might not be able to produce enough milk to nurse their calves successfully. Several specific nutrients such as polyunsaturated fatty acids (PUFA) are essential during gestation and lactation. We compared PUFA profiles (n=49) determined by gas chromatography and blubber thickness measurements (n=186) for calves that died in years with low (2003, 2004 and 2006) and high mortality (2005, 2007-2012). The proportion of PUFA increases with calf length and there was no detectable difference between years of low and high calf mortality. However, calf blubber was thinner in high-mortality years.

Kelp Gulls (*Larus dominicanus*) have learned how to feed on the skin and blubber of PV whales. Rowntree et al. (1996) found that mother-calf pairs spent more of their time in high-energy activities (e.g. fast swimming) when they were attacked by gulls. Energy reserves devoted to activities other than nursing could compromise the body condition of mother-calf pairs and thereby make them more vulnerable to a variety of other conditions that would otherwise pose little risk. Using aerial survey pictures we recorded the occurrence and number of gull lesions in pairs sighted in 1974-1990, 1995, 2000, 2005 and 2010. The percentage of pairs with gull lesions has increased in the last 20 years. In recent years calves have tended to have more lesions than their mothers. Since 1995, very few pairs have been entirely free of lesions.