

# Behavioural Landmarks in the Development of Neonatal Beluga Whales (*Delphinapterus leucas*)

Lauren Schneider, Lindsay Schamel & Michael Noonan  
Canisius College (Buffalo, New York, USA)



## Introduction

The behavioral development of a newborn mammal is critical to its survival and wellbeing. It is of fundamental importance to fully understand this period in our efforts to gather a complete picture of the natural history of any species.

It was the goal of this project to assess the frequency of maternal-infant contact and to appraise changes in the behavior of two beluga calves over their first half-year of life.

## Procedures

During July 2002, two male beluga calves were born within one week of each other at Marineland of Canada.

The behaviors of the beluga mothers and calves were sampled in real time through underwater viewing areas during the 1<sup>st</sup>, 2<sup>nd</sup>, 6<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup> months of age, and via videotape playback over all 8 months. Measures included inter-whale distance, intraspecific touches, bubbling, and aerial behaviors.

## Results

Overall, calves touched mothers far more than mothers touched calves ( $X(1)=1992.9$ ,  $p<.001$ ). See Fig 1.

Contact between the two adult mothers increased markedly after the birth of their calves ( $X(1)=4.2$ ,  $p<.05$ ). See Fig 2.

Calves bubbled more than adults during both the beginning ( $X(1)=146.3$ ,  $p<.001$ ) and end of our study period ( $X(1)=10.6$ ,  $p<.01$ ), but the levels for both groups approached each other with increasing calf age ( $X(1)=47.8$ ,  $p<.001$ ). See Fig 3.

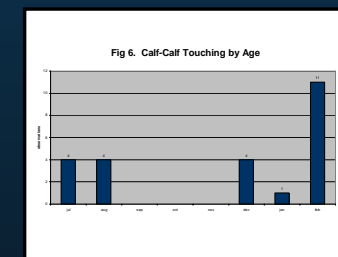
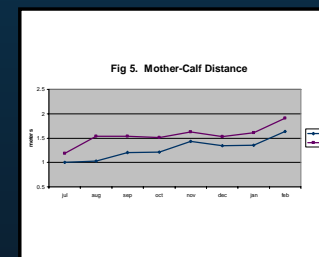
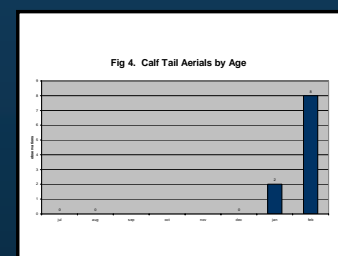
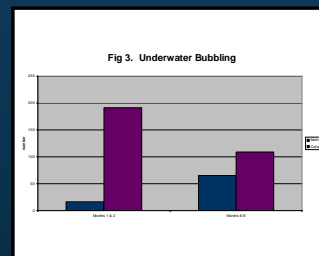
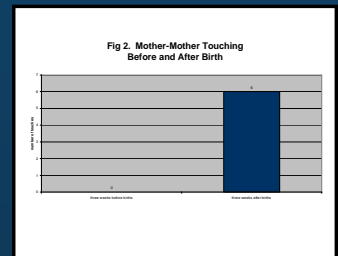
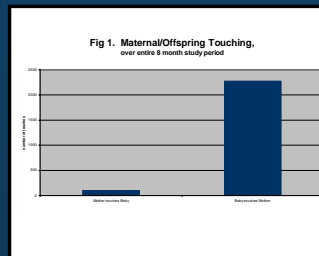
Tail aerials were only observed in the calves in the seventh and eighth months of age ( $X(1)=8.1$ ,  $p<.005$ ). See Fig 4.

The calves showed a new tendency to move at a distance from their mothers at eight months ( $F(1,274)=7.21$ ,  $p=.008$ , comparing 7<sup>th</sup> and 8<sup>th</sup> months only). See Fig 5.

There was a noticeable increase in calf-calf touching in their eighth month of age ( $X(1)=3.27$ ,  $p<.08$ , comparing the 8<sup>th</sup> month to the mode of the preceding months). See Fig 6.

## Discussion

At least three benefits can accrue from the provision of normative data derived in captivity on the development of newborns in any given species. In the first place, the developmental time course of young animals helps open a window into the natural history and behavioral ecology of a species, in ways that would otherwise be inaccessible from observations in the wild. Additionally, the establishment of norms may aid wildlife observers in gauging the age of young animals which they observe. Lastly, such findings can establish landmarks of development against which the staff of Seaquariums can appraise the development of subsequent newborns.



## Acknowledgements

We gratefully acknowledge the hospitality and support of John Holer, Dave Elliott, Pete Forrester and Tom Western of Marineland of Canada.

