

# INDEPENDENCE ACQUISITION IN BOTTLENOSE DOLPHIN CALVES BY SOCIAL PROXIMITY ANALYSIS

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## INTRODUCTION

Among bottlenose dolphins (*Tursiops truncatus*) one of the strongest mutual attraction is the mother-calf relationship. The affiliative bond may last for years until the offspring, after a complete weaning and autonomy acquisition, join the subadults' group (Wells, 1990). In this regard, learning to manage spatial proximity, in terms of separations and approaches with the mother, appears to be a crucial task for newborns and absolutely essential for their growth and survival.

The aim of this study was to investigate association patterns in two bottlenose dolphin mother-calf pairs in order to point out: a) the amount of time spent by calves with their mothers, with other conspecifics or alone; b) the responsibility for proximity maintenance from mother to calf and vice versa.

## MATERIALS AND METHODS

The study was conducted in the Rimini Delfinario (Italy) on two calves (a male and a female) monitored during the first year of life (see Tables). Animals were focally observed through systematic observations, for a total of 816 hours of sampling.

Observer 3.0, to measure the duration of associations, and Proximity Index (Martin & Bateson, 1986), to test the responsibilities, were applied.



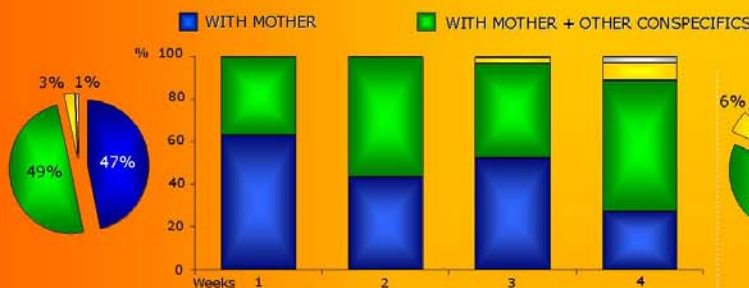
Built in: 1964	Surface: 314 m <sup>2</sup>	Capacity: 1500 m <sup>3</sup>
Shape: round	Diameter: 20 m	Max depth: 5.5 m



NAME	BLUE	ROCCO
SEX	female	male
BIRTH	26 Jun 1997	27 Sep 2003
PARENTS	Beta x Speedy	Alfa x Speedy
STUDY PERIOD	jun '97/jun '98	sep '03/sep '04

## WHAT HAPPENED...

### IN THE FIRST MONTH

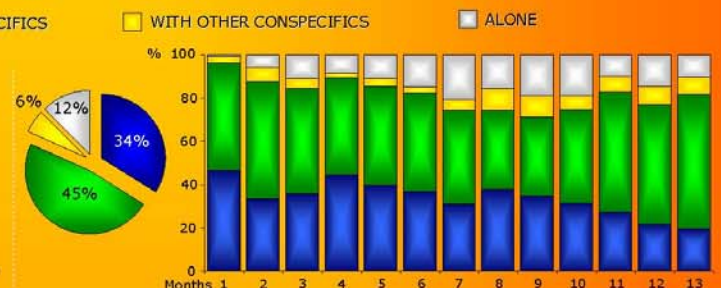


During the first month of life, calves maintained close nearness with the mothers, showing over 90% values of time spent together.

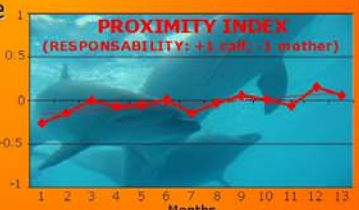
In this crucial phase, the main responsible in sustaining the bond appeared to be the parent.



### IN THE FIRST YEAR



During the months, swimming and socializing with individuals other than mother as well as solitary activities acquired more consistence, confirming the expected calf independence with age. At the same time, a shift in responsibility for proximity maintenance from parents to offspring was shown.



## CONCLUSION

The results agreed with the parent-offspring conflict theory (Trivers, 1974) and pointed out how behavioural systematic observations, even if conducted in controlled environment and requiring further investigation on "interactions", could provide reliable evidences on mother-calf kinship.