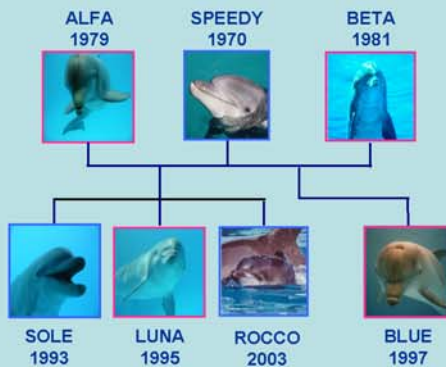


PATTERNS OF ASSOCIATION OF BOTTLENOSE DOLPHIN (*TURSIOPS TRUNCATUS*) FEMALES DURING GESTATION AND POSTNATAL PERIOD

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	ALFA	BETA
Origin	Mexico	Mexico
Delivery date	27/09/03	26/06/97
Calf observed	Rocco	Blue
Study period	Jul03/Mar04	Apr97/Dec97



Introduction

Most bottlenose dolphin (*Tursiops truncatus*) females can associate other females in stable bands and have strong relationship with their infants.

Spatial relationships are an essential aspect of the mother-infant bond since each of them appears to have a specific role for proximity maintenance.

Considering the mothers' experience and calves' gender, this study estimates:

1. the association of two females with other conspecifics in the pool during the last 3 months of pregnancy and 6 months post delivery;
2. the association of two females with their respective calves during the 6 months of life and the responsibility for proximity maintenance.

Methodology

Two female bottlenose dolphins (Alfa and Beta) were focally and systematically observed in weekly sessions at Rimini's Delphinarium (Italy) for a total number of 192h of observation during gestation and 290h during the postnatal period. Alfa is a multiparous female, Beta is a primiparous one.

Half-Weight-Index (HWI) and *Proximity Quotient (PQ)* were used to determine associations and responsibility for proximity maintenance from mother to calf and *vice versa* (Ginsberg 1992). Data collected were analysed by *Observer 3.0* (Noldus, 1997) and *SPSS 7.0* software.

Conclusions

Weekly trend of HWI revealed an increasing bond with another female during the last phase of gestational period for both Alfa and Beta (Fig. 1-2). In fact, while the multiparous Alfa was principally associated with the juvenile Luna, the primiparous Beta preferentially swam with Alfa. These observations seem to indicate the existence of 'co-operation' among females and to support the hypothesis of the reciprocal altruism during reproductive phases. Moreover, data here reported suggest that females – even in controlled conditions – adopt the strategy of preserving their parental investment first, forming alliances with individuals of the same gender and diminishing the relevance of some differences in females' features (such as age and/or experience).

After the delivery (Fig. 3-4-5), both HWI trends appeared similar, with mothers spending a considerable amount of time in close proximity with their newborns in order to favour calves' survivorship and development. However, PQ values gradually decreased over the time (Fig. 6), becoming slightly negative before the end of the observed semester. This result underline a clear shift in responsibility for proximity maintenance from mothers to calves with offspring's growth and maturation, suggesting the existence of relevant social conditions and/or behavioural factors that facilitate the independence process.

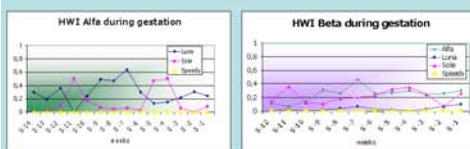


Fig. 1

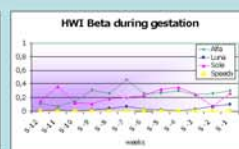


Fig. 2

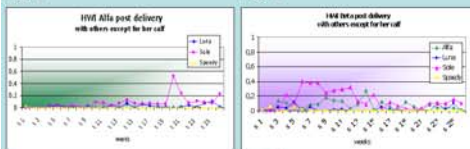


Fig. 3

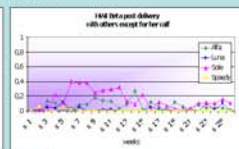


Fig. 4

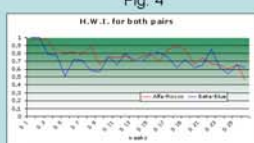


Fig. 5

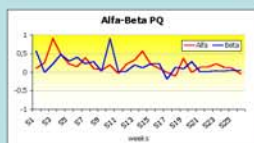


Fig. 6

THANKS TO: Rimini Delfinario owners and staff and all the observers who participated to the research program.