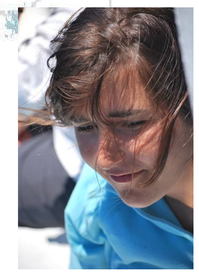

INTERSPECIES INTERACTION BETWEEN LONG-FINNED PILOT WHALES AND KILLER WHALES IN THE STRAIT OF GIBRALTAR.

ruth@circe-asso.org

Esteban, R. (1), Garcia Tíscar, S. (2) Verborgh, P. (1), Gauffier, P. (1), Jaget, Y. (1), de Stephanis, R. (1), Guinet, C. (3)

(1)CIRCE (Conservation, Information and Research on CEtaceans), Cabeza de Manzaneda 3, Pelayo, 11390 Algeciras, CADIZ, Spain
(2) Universidad Autonoma de Madird . (3) Centre d'Études Biologiques de Chizé, CNRS UPR 1934. 79 360 Villiers en Bois, France

INTRODUCTION

Long finned pilot whales and killer whales are present almost during the summer in the waters of the Strait of Gibraltar (Fig. 1), and are often seen interacting together in the Strait, the Pilot whales chasing the killer whales from their feeding grounds (Blue fin tuna). The objective of these poster is to evaluate if these interactions are related to the competition for the resources.

MATERIALS & METHODS

The strength of the spatial relationships between pairs of species was represented using 2 indices of the frequency of co-occurrence. To illustrate the association patterns of the species, average-linkage cluster analyses were constructed. Skin samples of the two species were collected in the same month (July) to avoid skin turnovers. Isotopic relationship of Carbon and Nitrogen were then analyzed.

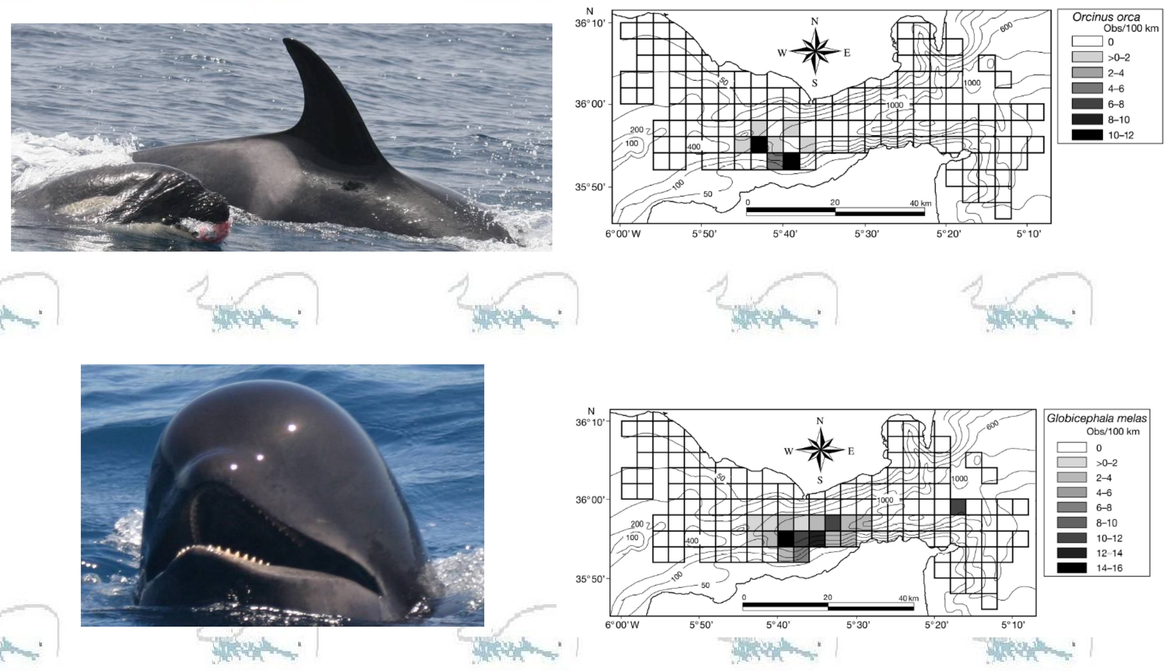

Figure 1. On the top spatial distribution of Killer whales and on the bottom of Pilot whales (de Stephanis et al. 2008ª).

RESULTS

A total of 4926 kilometers of effort were made. During the transects 332 and 54 groups of pilot whales and killer whales were made respectively. Whenever these two species had been seem together, the pilot whales had chased the killer whales in 100% of cases. The cluster analyses shows that the two species are only present in 23% of the same area (Fig. 2). The levels of the isotopic relationship of Carbon and Nitrogen were significantly different between them.

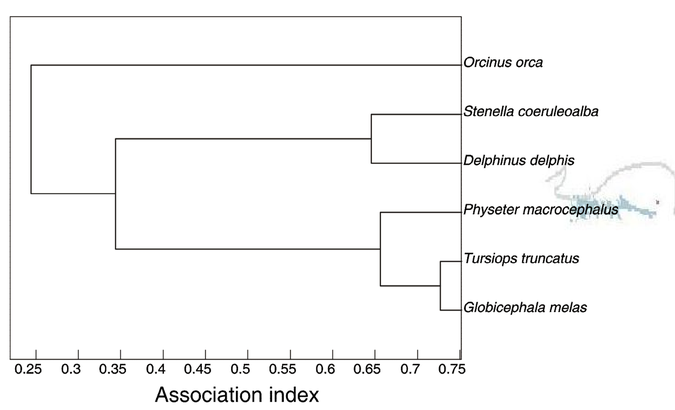

Figure 2. Cluster analyzed were made to illustrated the association between the different species in the Strait

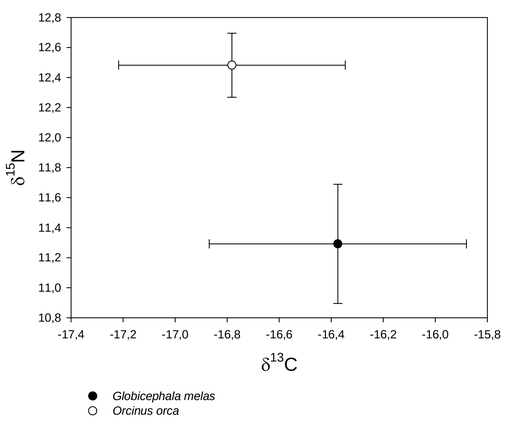

Figure 3. The levels of $\delta^{13}C$ and $\delta^{15}N$ where significantly different (Z adjusted and p-value respectively $\delta^{13}C$:-2,194624695; 0,028191244; $\delta^{15}N$ 3,988063159 6,66297.E^{-05})

DISCUSSION & CONCLUSION

These results show that those two species are present together in the Strait of Gibraltar, but they avoid themselves, and no explanation could be given analyzing their diet. One of the possible reasons would be that the pilot whales could be very territorial, and that two species with the same type of social structure (de Stephanis et al. 2008b, Esteban 2008) could represent a conflict from a territorial point of view, maybe due to their reproductive strategy, but the true nature of the interaction is difficult to interpret.

Aknowledgment

This results could not be possible without the help of all the volunteers, and researchers that helped us in this work and the Fundación Loro Parque, Fundación Biodiversidad, Ministerio de Medio Ambiente y Medio Rural y Marino and CEPSA.

References

Esteban, R. 2008. Abundacia, Estructura social y Parámetros de Historia Natural de la Orcas (*Orcinus orca*) en el Estrecho de Gibraltar. Tesis de master presentado el 12 de diciembre de 2008 en la Universidad de Cádiz

de Stephanis, R., Cornulier, T., Verborgh, P., Salazar Sierra, J., Pérez Gimeno, N., Guinet, C. 2008a. Summer spatial distribution of cetaceans in
the Strait of Gibraltar in relation to the oceanographic context. Marine Ecology Progress Series 353: 275-288.

de Stephanis, R., Verborgh, P., Pérez, S., Esteban, R., Minvielle-Sebastia, L., Guinet, C. 2008b. Long-term social structure of long-finned pilot whales
(Globicephala melas) in the Strait of Gibraltar. Acta ethologic.