

## ***Interactive comment on “Ecological niche of three teuthophageous odontocetes in the northwestern Mediterranean Sea” by E. Praca and A. Gannier***

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1. The surveys were potentially performed in all types of habitat "available" in the NWMS. The survey tracks went trough continental shelves and slope and offshore areas, as shown in the figure 1. However, there is still a difference of effort between areas on the continental slope and totally offshore waters. This difference is due to the difficulty of surveying offshore waters in relation to the autonomy of the boat used and the need of good weather conditions during several days, which is not so easy to fulfil in the NWMS. The abundance of cetaceans in offshore waters will only be clarified with more survey effort in those areas. We discussed with Alexandre Hirzel the possibility of weighting the presence data with the effort. For the pilot whale and Risso's dolphin, it introduced more bias than no weighting in relation to the small size of the data set. For the sperm whale, it did not highlight the potential offshore habitat and only

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decreased the statistical accuracy of the model. This weighting was therefore given up. We do not consider that result of Gannier and Praca (2007) are in contraction with this study. Sperm whales seemed to be influenced by both topographical and hydrological variables. The continental slope is a fixed spatial variable where observations of sperm whales are more concentrated. On the contrary, movements of front, such as the North Balearic front (NBF), lead in a spatial spread of observations of sperm whales. Even if we had the possibility to use frontal characteristics synchronized with sperm whales positions, the consequence of having a moving NBF would be an "unfocused" spatial picture of the offshore habitat.

2. Cephalopods, the main preys of the cetacean species studied here, are influenced by both topographic and hydrological variables (e.g. O'Dor and Coehlo, 1993; Quetglas et al. 2000). Little is known about their spatial distribution and movements at a large scale in the NWMS, but they are susceptible to follow their preys and be influenced by inter-annual changes. Teuthophageous cetaceans have certainly the ability to detect and track moving preys. For example, their echolocation pulses can be heard several kilometres away (delphinids) and more (sperm whales). Consequently, successful feeding by individuals or groups can be detected by conspecifics in the surrounding. From place to place, this effect might help to concentrate these predators in the locations where the prey availability is more important. However, as we said before, the goal of this work was to model a first insight of the ecological niche of teuthophageous odontocetes at large spatial and temporal scale in the whole NWMS. Influence of inter-annual variation of environmental variables should be studied at a smaller scale.

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