

PRELIMINARY ANALYSIS OF THE SOCIAL STRUCTURE OF SHORT-BEAKED COMMON DOLPHIN (*DELPHINUS DELPHIS*) IN THE TYRRHENIAN SEA, ITALY

Daniela Silvia Pace^{1,2}, Monica Mariani¹, Angelo Miragliuolo¹, Marco Venier¹
and Barbara Mussi¹

¹ Delphis mdc, via Zaro 22, 80075 Forio d'Ischia (NA) www.delphismdc.org

² Oceanomare, via Gino Marinuzzi 74, 00124 Roma www.oceanomare.info

The social structure of a population - usually measured through interactions or associations of individuals - plays a key role in many aspects of its ecology and biology. The social organization of the short-beaked common dolphin (*Delphinus delphis*) in the Mediterranean Sea is largely unknown due to the rarity of the species, listed as endangered in the IUCN red list. Our purpose was to identify and quantify the re-sightings of individuals and associations formed among them to provide insights into the social organization of common dolphin around Ischia Island (Italy). In this study, the "half-weight index" (HWI) was used to describe the association patterns. We conducted photographic-identification surveys in the June-October period, 2003-2008, identifying a total number of 91 dolphins in 17 sightings. Many of these animals were re-sighted in 2 or more occasions, indicating a high level of site fidelity for at least part of the population. After frequency of occurrence individuals in focal schools were taken into consideration (animals recaptured at least 3 times), 38 dolphins were retained for association analysis. Overall, the community showed a highly stable association patterns, with a mean HWI>0.5. We also identified dyads having preferred associations (HWI increased of 30% than the mean HWI), discovering several individuals (females in more than 50% of the occasions) with five-years-lasting associations. In this population, pattern and level of association among females in different reproductive states (females from late pregnancy to the first year of their calves' life or females from early pregnancy to their calves' newborn period, females with older calves or without calves) seemed to be very strong. We suggest that several selective pressures, including ecological features of the area (i.e localization of food resources) as well as eto-ecological constrains (i.e. the overlap with striped dolphin *Stenella coeruleoalba* in habitat use and distribution), may be of importance in determining such associations.