

GRETA COLOMBI₁, SIMONA SANVITO₂, and FILIPPO GALIMBERTI₂

1: Dipartimento di Biologia Animale, Università degli Studi di Milano

2: Elephant Seal Research Group, Sea Lion Island, Falkland Islands

SOCIALITY DURING PREDATION EVENTS OF KILLER WHALES (*ORCINUS ORCA*) OF THE FALKLAND ISLANDS

Killer whales (*Orcinus orca*) are a charismatic top predator species with a worldwide distribution. Killer whales have been subject of intensive long-term studies in the northern hemisphere, while research on them in the southern hemisphere started more recently, and was scarce in particular in the South Atlantic. A notable aspect of killer whale biology is their complex sociality, based on a dynamic and hierarchical social system, and on long-term bonds between genetically related individuals. In 2013 we begun a long-term study of killer whales at Sea Lion Island, a hotspot of killer whale sightings in the Falkland Islands. We studied killer whale sociality focusing on social behaviour and association during predation events, that usually involve southern elephant seals (*Mirounga leonina*) as prey. We studied predation events using direct observation from land, photo-identification, videos taken using a drone (Phantom III, DJI), and necropsies of prey found washed ashore. We found that: 1) the basic social unit of Sea Lion Island killer whales is the mother-calf association, that can include up to three generations of calves; 2) multiple mother-calf pairs are often associated in pods, that are stable social units that last at least for the whole length of the season (September-March); 3) different pods, and non pod individuals, are often associated during predation events, that can involve up to 11 individuals; 4) transient killer whales, i.e. individuals that are recognized but are observed at Sea Lion Island for just a few hours to a few days, can be involved in predations events; 5) predations events involve complex social behaviours, including collaboration to keep the prey carcass floating, calf feeding facilitation by adults, and active prey sharing; 6) the use of drone videos greatly increases the understanding of killer whales sociality during predation events, and at large. All together, predations are special events in killer whales sociality, in which both social behaviour and association are more complex and dynamic than during the rest of killer whales activity. This added complexity is likely related to the problem of capturing a large marine mammal prey that is negatively-buoyant and, therefore, needs the collaboration of various individuals to be handled.