

# Elephant seals of Sea Lion Island

a long term research project

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If you like superlatives you will love elephant seals. They are the biggest of all seals, with males weighing more than 3000 kilograms, and they show the strongest sexual dimorphism of all mammals, the females being 3-4 times smaller than the males. Their life cycle presents impressive changes. For most of the year elephant seals are solitary, while feeding at sea, where they dive up to 1500 meters to fish squid, without ever hauling out to rest. During the breeding season, however, they are very social. Females come to land and form big groups of many hundreds of animals (called harems), while males fight strenuously to get control of them and mate. Each female usually gives birth to a single pup, suckling it for about three weeks, then she mates and returns to sea, weaning the pup in a pretty abrupt way. Both males and females fast while on land, losing an impressive percentage of their body weight, up to more than 40%. After this huge breeding effort, they quickly go back to their feeding grounds, to replace the energy lost and get ready for the next breeding season. Weaned pups remain on land for about 6-8 weeks, playing with other pups and practising their swimming skills, before their first feeding trip in the open sea.

In 1995 we started a long term research project on elephant seals at Sea Lion Island, which shelters a small, almost isolated, population of elephant seals of about 500 breeding females and 1800 individuals in all. This population represents the only big breeding colony in the islands. At the beginning, our research project was focused on breeding behaviour, but along the years we gradually expanded it to the elephant seals biology and



behaviour at large, including genetics, acoustic communication, spatial distribution, hormonal studies, demography and, last but not least, conservation issues, including population viability.

Due to its small size, and the lack of immigration of breeding individuals from other colonies, the Sea Lion Island population is a very fragile system. In principle, it is not possible to effectively preserve and manage a natural system without a good knowledge of it. Therefore, we see our research as a first step towards the conservation of the population.

Each year we spend the three months of the elephant seals breeding season (from September to November) at Sea Lion Island, with a team of 2 to 8 people, adjusting our rhythms to the seals life. This population is ideal for our research, because it is big enough to make our research effort worth, but not too big to make it difficult or impossible to manage our research plan. Thanks to intensive marking, we are able to follow with a good accuracy each seal throughout its lifetime.



This is a big bonus, because a core concept of current wildlife research is that the basic biological unit is the individual, and that the phenomena observed at population level are the result of individual tactics and strategies. A safe individual recognition is, therefore, the most important of our research tools. Elephant seals are so kind with humans, that we can easily mark them without stress for the animals, or risk for us. Every day, while in the field, we carry on routine duties like counts, marking of individuals, identification of previously marked animals, and observation of the seals behaviour. Moreover, we record vocalizations for communication studies, take pictures for body size estimation, weigh pups to study female parental investment, get skin samples for the genetic work, take blood samples for hormone studies, and so on. This is our tenth year of research in the Falklands, and we think it is the right time to thank the elephant seals by telling their and our story. For more information of the project just point your browser to our web site, [www.eleseal.org](http://www.eleseal.org).



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