

Marine Mammal Exploration of the Oceans Pole to Pole (MEOP-BR)

Dr. Mônica M.C. Muelbert
Fundação Universidade Federal do Rio Grande (FURG), Brasil

MEOP-BR is the Brazilian counterpart of Marine Mammal Exploration of the Oceans Pole to Pole (MEOP – IPY no. 153), a project that will deploy state-of-the-art animal-borne CTD tags on strategically chosen, deep-diving marine mammal species to explore their movement patterns, behaviour and habitat utilization in Polar Regions. Concomitant with the ecological data regarding these top predators, a vast, high-precision oceanographic data set will be collected covering logistically difficult areas of ocean in Polar Seas at the fringes of the North and South Atlantic and the South Pacific that are strategically important to climate and ocean modelling. The cross-disciplinary merging of classical oceanography and marine mammal ecology will significantly advance our understanding of the world's oceans and top predators that live in them. CTD-tags will be deployed on beluga whales (*Delphinapterus leucas*), hooded seals (*Cystophora cristata*), Weddell seals (*Leptonychotes weddellii*), crabeater seals (*Lobodon carcinophagus*) and southern elephant seals (*Mirounga leonina*). These species forage in oceanic “hot-spots” where productivity is high, areas which also coincide with human fisheries efforts and areas of high oceanographic interest. IPY affords a unique opportunity to collect novel data sets from relatively little-known polar marine mammal species simultaneously with dedicated oceanographic cruises sampling along systematic grids using traditional ship-based CTD technology. Cooperation between biological and oceanographic programmes within IPY will provide MEOP with comprehensive, synoptic oceanographic coverage that will provide a unique opportunity to quantify factors determining habitat selection and use by key polar marine mammal species. The oceanographic data collected in MEOP will, in turn, provide otherwise unobtainable oceanographic data sets collected at natural hot-spots of productivity, as input data to physically-oriented modeling projects (e.g. the Bipolar Atlantic Thermohaline Circulation Programme, Transport through gaps across the Kerguelen Plateau and inter-basin exchange). This study is especially timely given the predictions for ecosystem changes in both Arctic and Antarctic systems within the coming decades due to climate change, in addition to increasing fisheries and tourism activities in both the Arctic and Antarctic.