

## NEW INSIGHTS INTO SOUTHERN OCEAN PHYSICAL AND BIOLOGICAL PROCESSES REVEALED BY INSTRUMENTED ELEPHANT SEALS.

**Charrassin J.-B.<sup>(1)</sup>, Roquet F.<sup>(1)</sup>, Park Y.-H.<sup>(1)</sup>, Bailleul F.<sup>(2)</sup>, Guinet C.<sup>(2)</sup>, Meredith M.<sup>(3)</sup>, Nicholls K.<sup>(3)</sup>, Thorpe S.<sup>(3)</sup>, McDonald B.<sup>(4)</sup>, Costa D.P.<sup>(4)</sup>, Tremblay I.<sup>(5)</sup>, Goebel M.<sup>(6)</sup>, Muelbert M.<sup>(7)</sup>, Bester M.N.<sup>(8)</sup>, Plötz J.<sup>(9)</sup>, Bornemann H.<sup>(9)</sup>, Timmermann R.<sup>(9)</sup>, Hindell M.<sup>(10)</sup>, Meijers A.<sup>(11)</sup>, Coleman R.C.<sup>(11)</sup>, Field I.C.<sup>(12)</sup>, McMahon C.M.<sup>(13)</sup>, Rintoul S.R.<sup>(14)</sup>, Sokolov S.<sup>(14)</sup>, Boehme L.<sup>(15)</sup>, Lovell P.<sup>(15)</sup>, Fedak M.A.<sup>(15)</sup>, Biuw M.<sup>(16)</sup>, Nost O.A.<sup>(16)</sup>, Lydersen C.<sup>(16)</sup> & Kovacs K.M.<sup>(16)</sup>**

<sup>(1)</sup>LOCEAN/Muséum National d'Histoire Naturelle, 43 rue Cuvier, 75231 Paris Cedex 05, France, jbc@mnhn.fr

<sup>(1)</sup>LOCEAN/Muséum National d'Histoire Naturelle, 43 rue Cuvier, 75231 Paris Cedex 05, France, roquet@mnhn.fr

<sup>(1)</sup>LOCEAN/Muséum National d'Histoire Naturelle, 43 rue Cuvier, 75231 Paris Cedex 05, France, yhpark@mnhn.fr

<sup>(2)</sup>Centre d'Etudes Biologiques de Chizé, CNRS, BP 14, F-79360 Villiers-en-Bois, France, bailleul@cebc.cnrs.fr

<sup>(2)</sup>Centre d'Etudes Biologiques de Chizé, CNRS, BP 14, F-79360 Villiers-en-Bois, France, guinet@cebc.cnrs.fr

<sup>(3)</sup>British Antarctic Survey, High Cross, Madingley Rd, Cambridge CB3 0ET, United Kingdom, mmm@bas.ac.uk

<sup>(3)</sup>British Antarctic Survey, High Cross, Madingley Rd, Cambridge CB3 0ET, United Kingdom, kwini@bas.ac.uk

<sup>(3)</sup>British Antarctic Survey, High Cross, Madingley Rd, Cambridge CB3 0ET, United Kingdom, seth@bas.ac.uk

<sup>(4)</sup>Center for Ocean Health, Institute of Marine Sciences, Long Marine Lab, University of California, 100 Shaffer Rd. Santa Cruz, CA 95060, USA, mcdonald@biology.ucsc.edu

<sup>(4)</sup>Center for Ocean Health, Institute of Marine Sciences, Long Marine Lab, University of California, 100 Shaffer Rd. Santa Cruz, CA 95060, USA, costa@ucsc.edu

<sup>(5)</sup>Centre de Recherche Halieutique Méditerranéenne et Tropicale, IRD Avenue Jean Monnet, BP 171 34203 Sète cedex, France, yann.tremblay@ird.fr

<sup>(6)</sup>Antarctic Ecosystem Research Division/NOAA, National Marine Fisheries Service, 8604 La Jolla Shores Drive, La Jolla, CA 92037-1508, USA, Mike.Goebel@noaa.gov

<sup>(7)</sup>PPGOB - Instituto de Oceanografia, Universidade Federal do Rio Grande, Caixa Postal 474, 96201-900 Rio Grande RS Brasil, Monica.Muelbert@furg.br

<sup>(8)</sup>Mammal Research Institute, Department of Zoology & Entomology, School of Biological Sciences, University of Pretoria, Pretoria 0002, South-Africa, mnbester@zoology.up.ac.za

<sup>(9)</sup>Alfred Wegener Institute, Columbusstrasse, D-27568 Bremerhaven, Germany, Joachim.Ploetz@awi.de

<sup>(9)</sup>Alfred Wegener Institute for Polar and Marine Research, P.O. Box 12 01 61, 27515 Bremerhaven, Germany, hbornemann@awi-bremerhaven.de

<sup>(9)</sup>Alfred Wegener Institute, Bussestrasse 24, D-27570 Bremerhaven, Germany, Ralph.Timmermann@awi.de

<sup>(10)</sup>Antarctic Wildlife Research Unit, University of Tasmania, PO Box 252-05, Hobart, TAS 7001, Australia, Mark.Hindell@utas.edu.au

<sup>(11)</sup>Center for Marine Science, University of Tasmania, Private Bag 78, Hobart, TAS 7001, Australia, amejers@utas.edu.au

<sup>(11)</sup>Center for Marine Science, University of Tasmania, Private Bag 78, Hobart, TAS 7001, Australia, richard.coleman@utas.edu.au

<sup>(12)</sup>Marine Mammal Research Group, Graduate School of the Environment, Macquarie University Sydney, NSW 2109, Australia, ifield@science.mq.edu.au

<sup>(13)</sup>School for Environmental Research, Charles Darwin University, Darwin NT 0909, Australia, clive.mcmahon@cdu.edu.au

<sup>(14)</sup>CSIRO Wealth from Oceans National Research Flagship and Antarctic Climate and Ecosystems Cooperative Research Centre, Hobart, TAS 7001, Australia, Steve.Rintoul@csiro.au

<sup>(14)</sup>CSIRO Wealth from Oceans National Research Flagship and Antarctic Climate and Ecosystems Cooperative Research Centre, Hobart, TAS 7001, Australia, Serguei.Sokolov@csiro.au

<sup>(15)</sup>Sea Mammal Research Unit, Gatty Marine Laboratory, University of St Andrews, St Andrews, Fife KY16 8LB, United Kingdom, lb284@st-andrews.ac.uk

<sup>(15)</sup>Sea Mammal Research Unit, Gatty Marine Laboratory, University of St Andrews, St Andrews, Fife KY16 8LB, United Kingdom, p.lovell@sea-mammal-research-unit.st-andrews.ac.uk

<sup>(15)</sup>Sea Mammal Research Unit, Gatty Marine Laboratory, University of St Andrews, St Andrews, Fife KY16 8LB, United Kingdom, maf3@st-andrews.ac.uk

<sup>(16)</sup>Norwegian Polar Institute, Polar Environmental Centre, NO-9296 Tromsø, Norway, martin.biuw@npolar.no

<sup>(16)</sup>Norwegian Polar Institute, Polar Environmental Centre, NO-9296 Tromsø, Norway, ole.anders.nost@npolar.no

<sup>(16)</sup>Norwegian Polar Institute, Polar Environmental Centre, NO-9296 Tromsø, Norway, christian.lydersen@npolar.no

<sup>(16)</sup>Norwegian Polar Institute, Polar Environmental Centre, NO-9296 Tromsø, Norway, kit.kovacs@npolar.no