



Suivre les prédateurs pour protéger les écosystèmes de l'océan Austral – un exemple de projet SCAR



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16^{èmes} JOURNEES
SCIENTIFIQUES

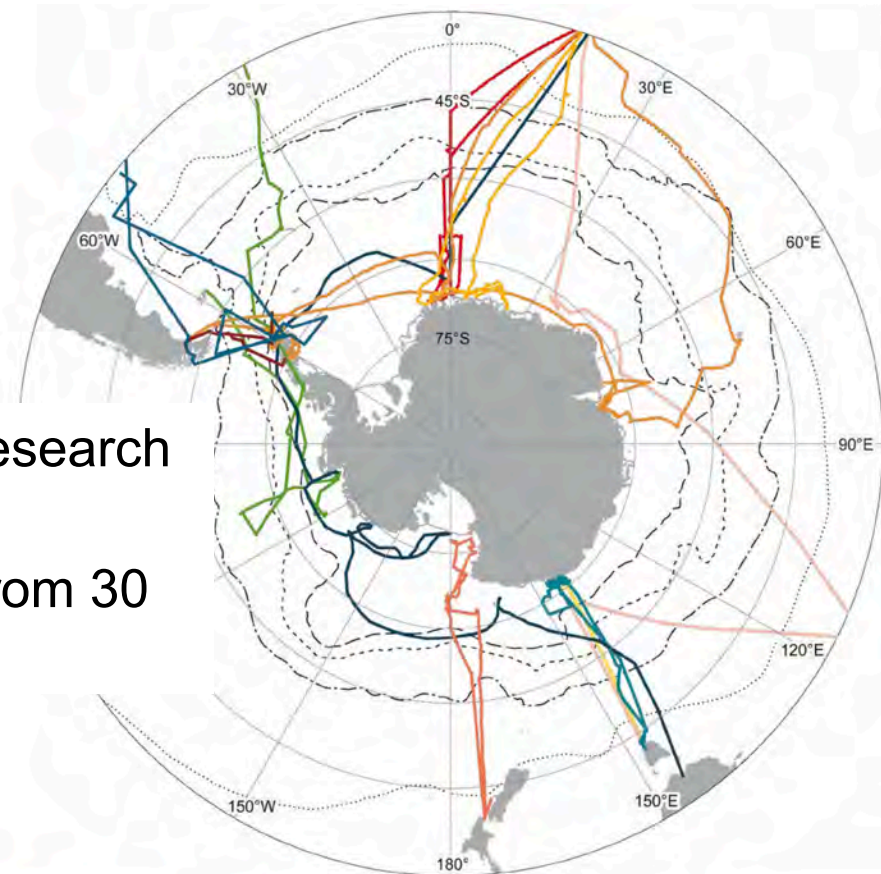
C N F R A
Comité National Français des Recherches
Arctiques et Antarctiques



Suivre les prédateurs pour protéger les écosystèmes de l'océan Austral – un exemple de projet SCAR



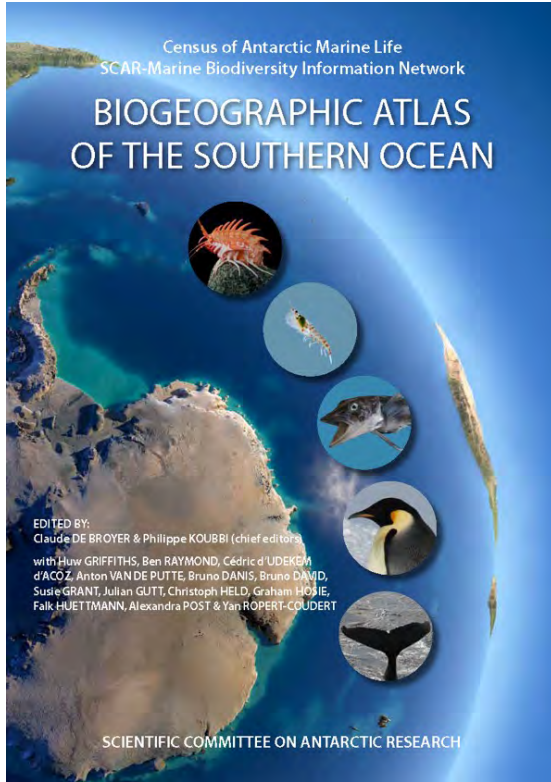
2005-2010: 19 research
voyages
300 biologists from 30
countries



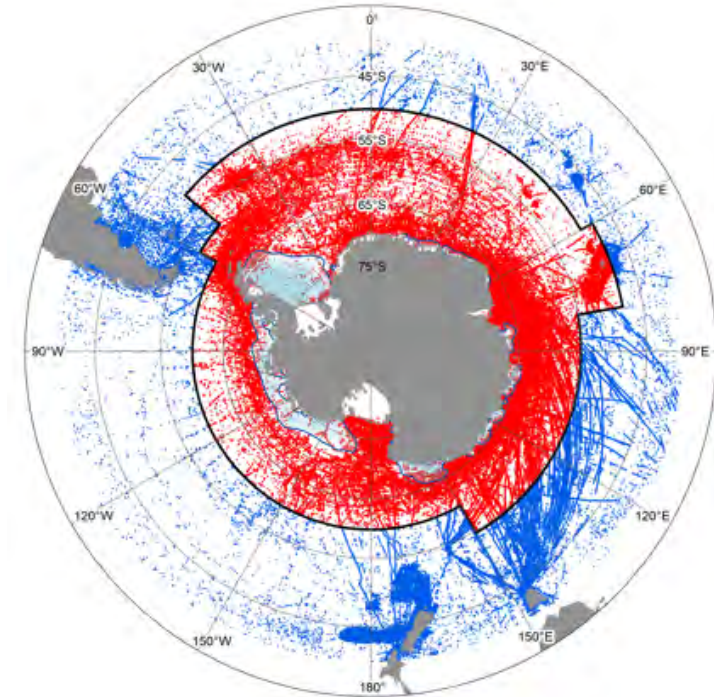
Map 1

— Akademik Fedorov, 2007/08	— Polarstern, 2006/07
— Ary Rongel, 2007/08	— Polarstern, 2007/08
— Aurora Australis, 2007/08	— Tangaroa, 2007/08
— James Clark Ross, 2007/08	— Umitaka Maru, 2007/08
— L'Astrolabe, 2007/08	— Yuzhmorgeologiya, 2007/08
— Papanin, 2008-2009	

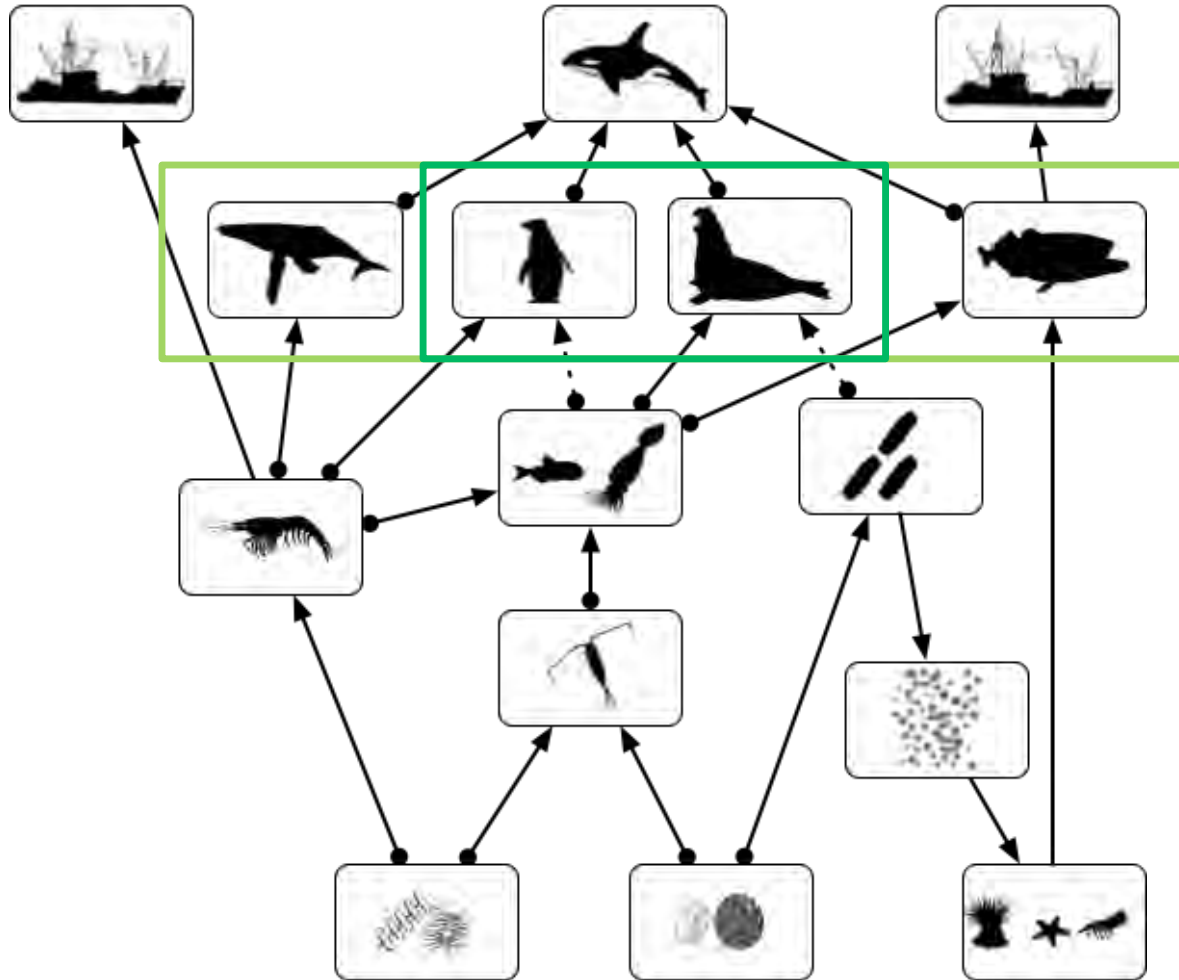




- 5 years
- 66 chapters
- 147 authors
- 15 editors
- 91 institutes
- 22 countries



Predators as eco-indicating species



Predators as eco-indicating species



Important Marine Mammal Areas (IMMA)



Retrospective Analysis of Antarctic Tracking Data (RAATD)





Important Marine Mammal Areas (IMMA)

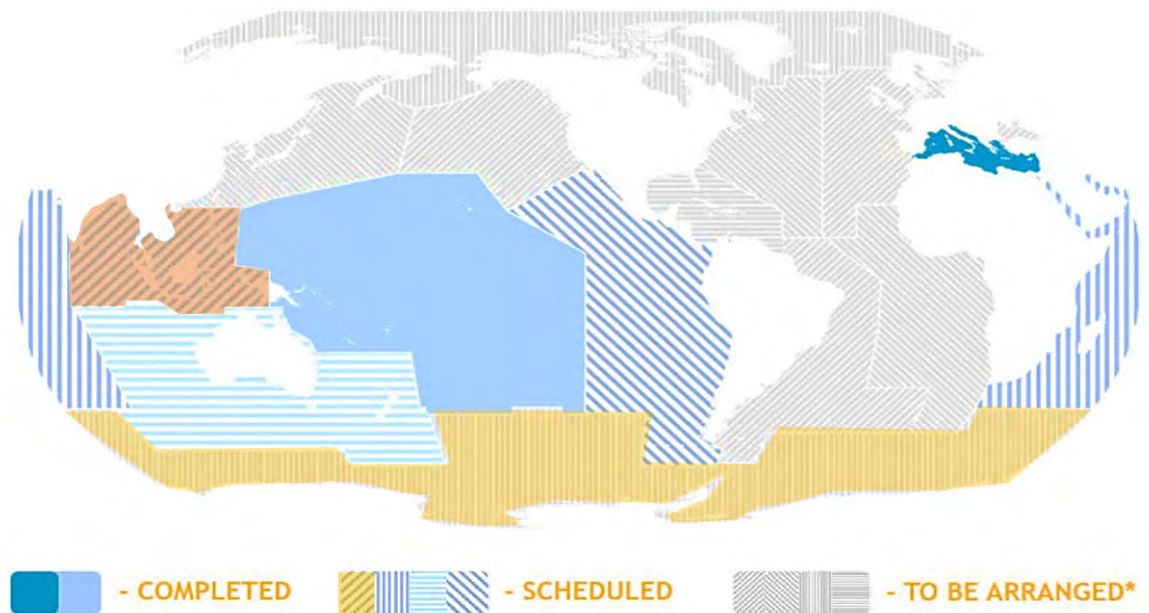


A “discrete” portion of habitat, important for one or more marine mammal species, with the **potential** to be delineated and managed

1 – AoI

Areas of Interest

Collect information to identify areas of interest, e.g. Southern Ocean





Important Marine Mammal Areas (IMMA)



A “discrete” portion of habitat, important for one or more marine mammal species, with the **potential** to be delineated and managed

1 – AoI

Areas of Interest

Collect information to identify areas of interest, e.g. Southern Ocean

2 – cIMMA

Candidate IMMA

Experts workshop



4 criteria

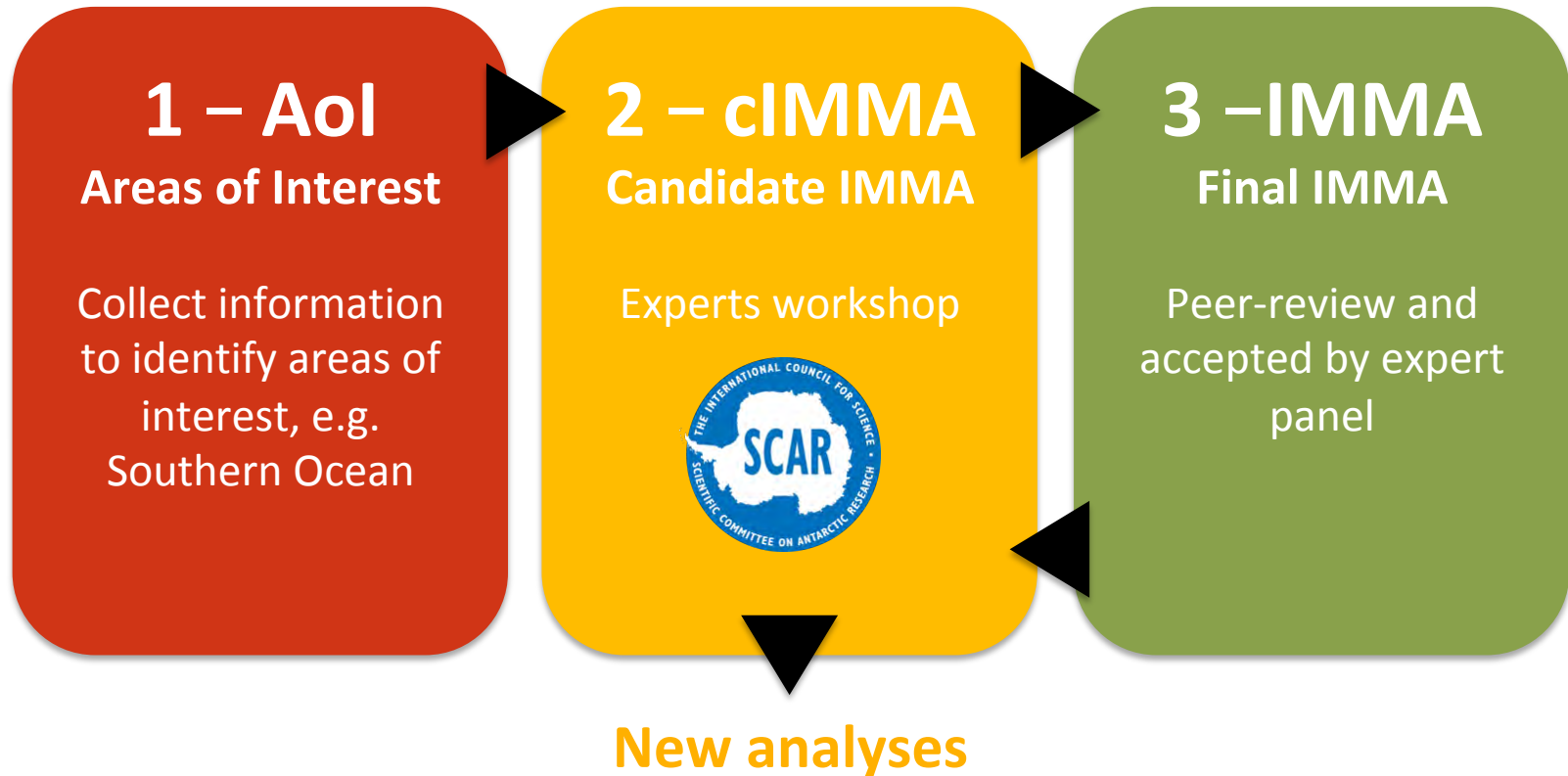
- Vulnerability
- Distribution/abundance
 - Small resident
 - Aggregation
- Key life cycles areas
 - Reproduction
 - Feeding
 - Migration
- Special attributes
 - Distinctiveness
 - Diversity



Important Marine Mammal Areas (IMMA)

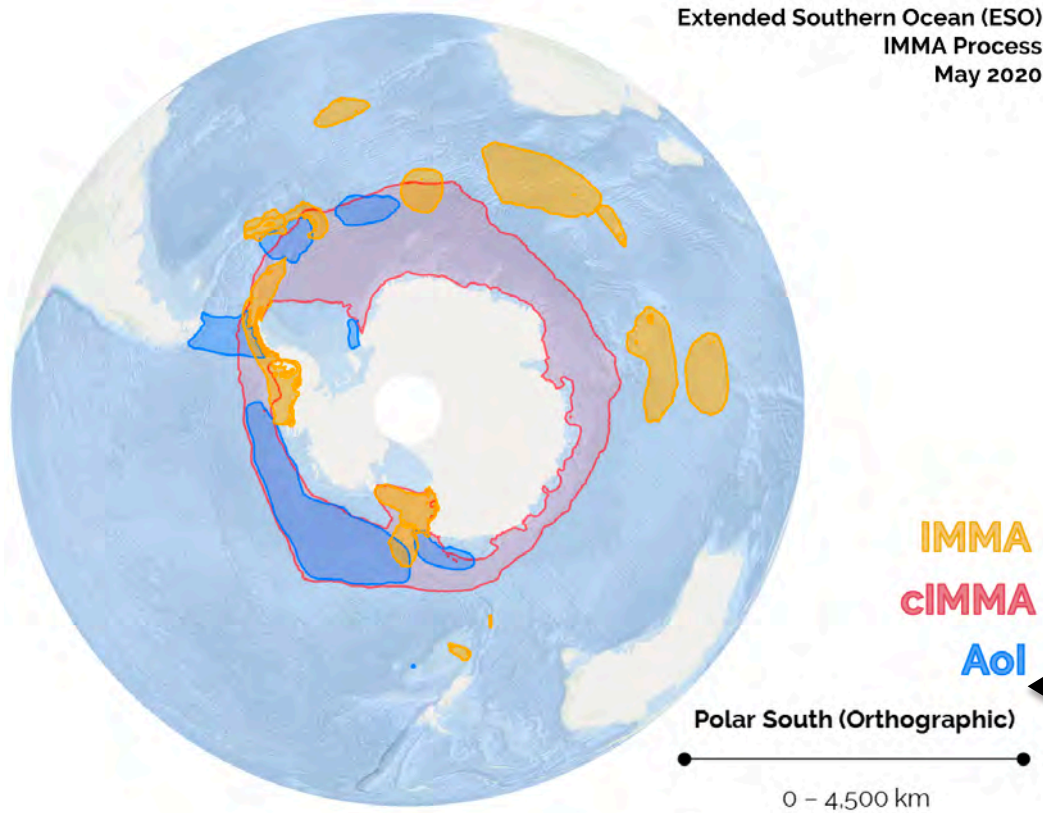


A “discrete” portion of habitat, important for one or more marine mammal species, with the **potential** to be delineated and managed





Important Marine Mammal Areas (IMMA)



3 – IMMA
Final IMMA

Peer-review and
accepted by expert
panel

Advocacy



Retrospective Analysis of Antarctic Tracking Data (RAATD)



Retrospective Analysis of Antarctic Tracking Data

Identifying Areas of Ecological Importance to an assemblage of top-predators in the Southern Ocean



Expert Group on Birds and Marine Mammals, project started in 2009!



Retrospective Analysis of Antarctic Tracking Data (RAATD)



Retrospective Analysis of Antarctic Tracking Data

Identifying Areas of Ecological Importance to an assemblage of top-predators in the Southern Ocean



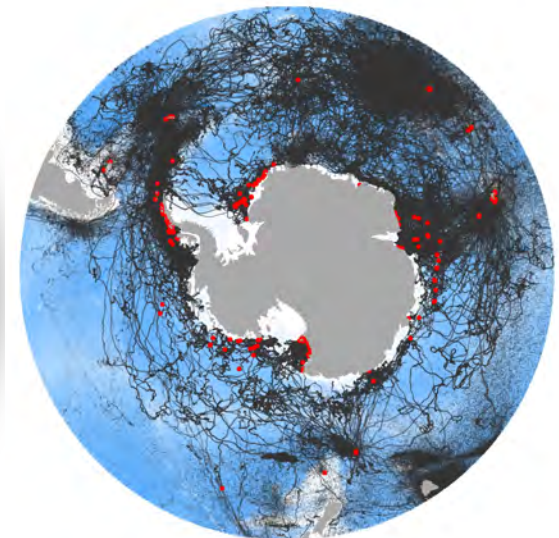


Retrospective Analysis of Antarctic Tracking Data (RAATD)



Retrospective Analysis of Antarctic Tracking Data

Identifying Areas of Ecological Importance to an assemblage of top-predators in the Southern Ocean





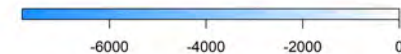
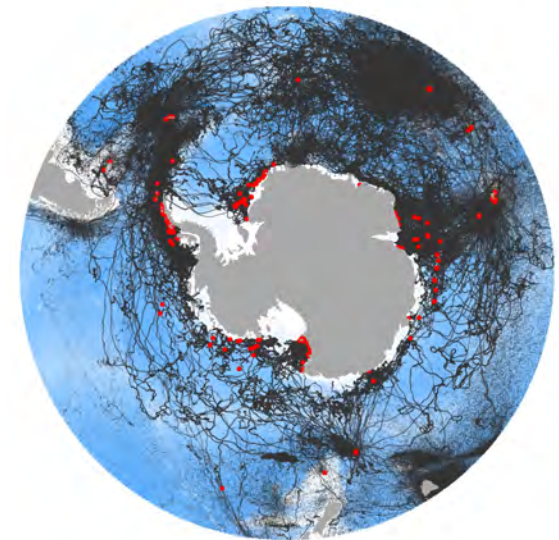
Retrospective Analysis of Antarctic Tracking Data (RAATD)



Retrospective Analysis of Antarctic Tracking Data

Identifying Areas of Ecological Importance to an assemblage of top-predators in the Southern Ocean

79 data contributors
46 institutions
Data from 17 species
4060 tracks
2,965,926 location fixes





Retrospective Analysis of Antarctic Tracking Data (RAATD)



DATA PAPER

Publicly available dataset for use by scientists and managers

Yan Ropert-Coudert^{1,*}, Anton P. Van de Putte^{2,3,*}, Horst Bornemann⁴, Jean-Benoît Charrassin⁵, Bruno Danis⁶, Luis A. Hückstädt⁷, Ian D. Jonsen⁸, Mary-Anne Lea^{9,10}, Ryan R. Reisinger^{1,11,12}, David Thompson¹³, Leigh . Torres¹⁴, Philip N. Trathan¹⁵, Simon Wotherspoon⁹, David G. Ainley¹⁶, Rachael Alderman¹⁷, Virginia Andrews-Goff^{18,9}, Ben Arthur⁹, Grant Ballard¹⁹, John Bengtson²⁰, Marthán N. Bester²¹, Lars Boehme²², Charles-André Bost¹, Peter Boveng²⁰, Jaimie Cleeland⁹, Rochelle Constantine²³, Daniel P. Costa⁷, Robert J. M. Crawford²⁴, Luciano Dalla Rosa²⁵, P.J. Nico de Bruyn²¹, Karine Delord¹, Sébastien Descamps²⁶, Mike Double¹⁸, Katie Dugger²⁷, Louise Emmerson¹⁸, Mike Fedak²², Ari Friedlander²⁸, Nick Gales¹⁸, Mike Goebel²⁹, Kimberly T. Goetz¹³, Christophe Guinet¹, Simon D. Goldsworthy³⁰, Rob Harcourt⁸, Jefferson Hinke³¹, Kerstin Jerosch⁴, Akiko Kato¹, Knowles R. Kerry¹⁸, Roger Kirkwood¹⁸, Gerald L. Kooyman³², Kit M. Kovacs³³, Kieran Lawton¹⁸, Andy Lowther³³, Christian Lydersen³³, Phil O'B. Lyver³⁴, Azwianewi B. Makhado²⁴, Maria E. I. Márquez³⁵, Birgitte McDonald³⁶, Clive McMahon^{37,9}, Monica Muelbert³⁸, Dominik Nachtsheim^{4,39}, Keith Nicholls¹⁵, Erling S. Nordøy⁴⁰, Silvia Olmastroni^{41,42}, Richard A. Phillips¹⁵, Pierre Pistorius¹¹, Joachim Plötz⁴, Klemens Pütz⁴³, Norman Ratcliffe¹⁵, Peter G. Ryan⁴⁴, Mercedes Santos³⁵, Arnoldus Schytte Blix⁴⁰, Colin Southwell¹⁸, Iain Staniland¹⁵, Akinori Takahashi⁴⁵, Arnaud Tarroux⁴⁶, Wayne Trivelpiece³¹, Henri Weimerskirch¹, Barbara Wienecke¹⁸, Ben Raymond^{18,9,10,**}, Mark A. Hindell^{9,10,**}

SCIENTIFIC
DATA 

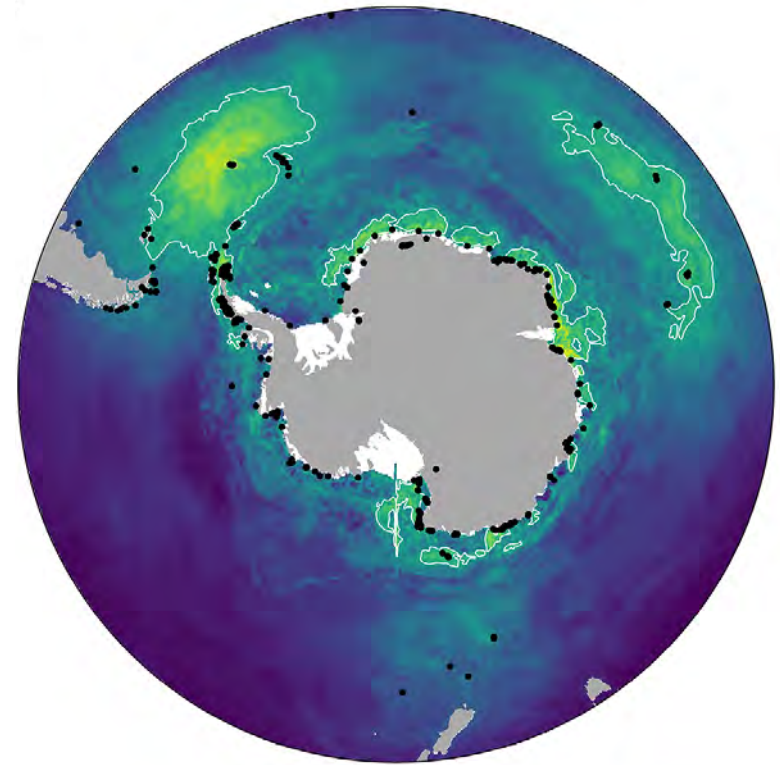


Retrospective Analysis of Antarctic Tracking Data (RAATD)



SYNTHESIS PAPER

- Identifying Areas of Ecological Importance
- Associated threats
- Future distributions (IPCC scenarios)



Mean habitat importance

20

Hindell et al. 2020 Nature

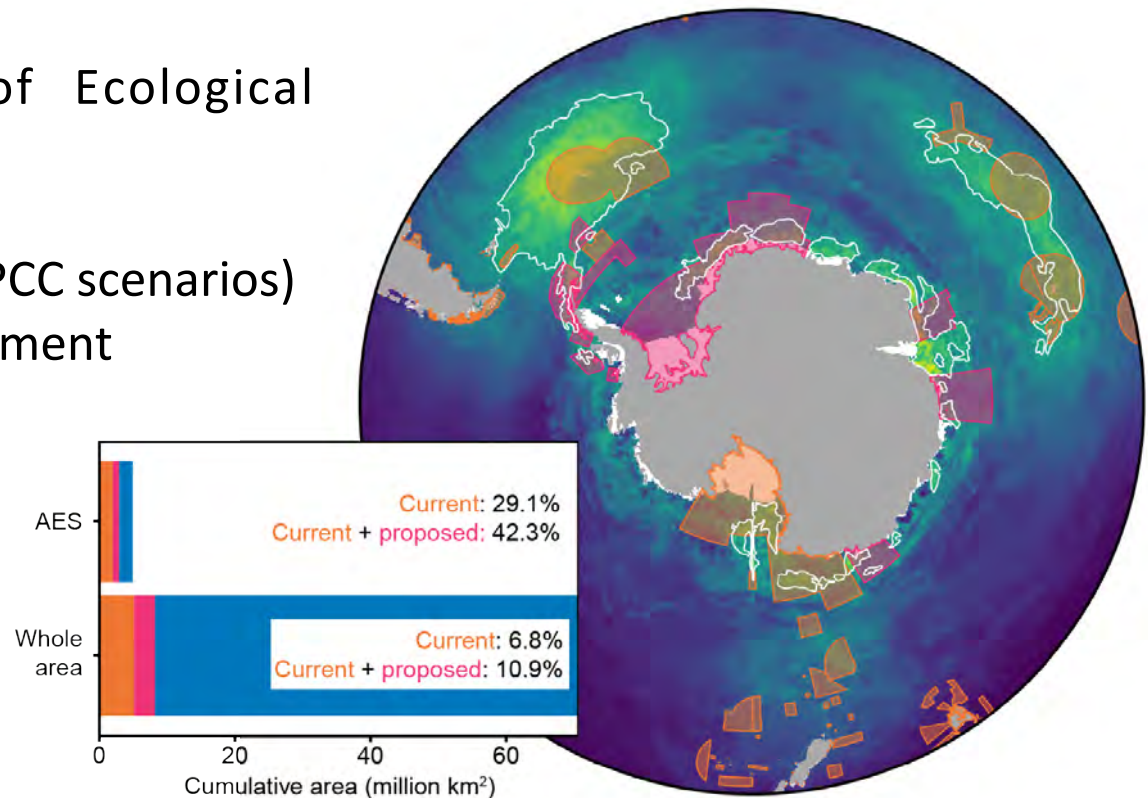


Retrospective Analysis of Antarctic Tracking Data (RAATD)

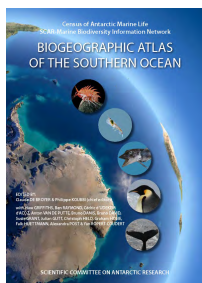


SYNTHESIS PAPER

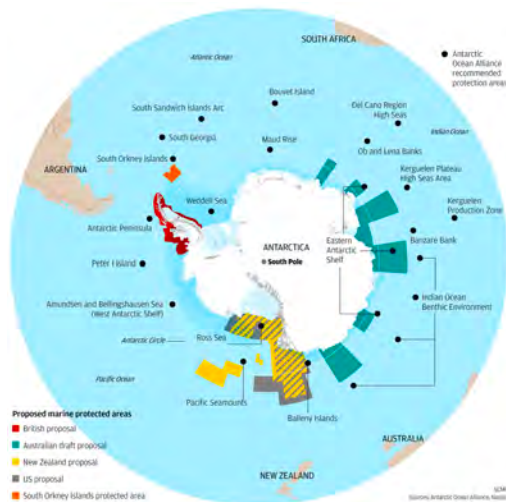
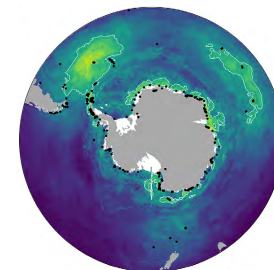
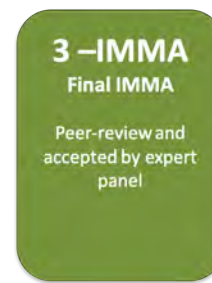
- Identifying Areas of Ecological Importance
- Associated threats
- Future distributions (IPCC scenarios)
- Role in spatial management



Timeline et Aires Marines Protégées



SCIENTIFIC DATA



Merci pour votre attention

