

BioSketch: Yan Ropert-Coudert
Director of Research, CNRS, France; Chief Officer – SCAR Life Sciences Group; Secretary – SCAR Expert Group on Birds and Marine Mammals



Yan Ropert-Coudert is a Director of Research at the French CNRS and specialized in the marine ecology of top predators, especially seabirds. He leads a long-term Adélie penguin sentinel monitoring program in the eastern Antarctic sector, where the use of animal-embarked data-recording devices is prominent. He is the Director of the SCAR Life Sciences Group and co-PI of the SCAR Expert Group on Birds and Marine Mammals. Yan is a member of the French delegation at the ATCM/CEP and the second delegate of the French delegation to SCAR.

Selected peer-reviewed outputs of relevance to SCAR/CEP:

De Broyer C, Koubbi P, Griffiths HJ, Raymond B, d'Udekem d'Acoz C, Van de Putte AP, Danis B, David B, Grant S, Gutt J, Held C, Hosie G, Huettmann F, Post A, Ropert-Coudert Y (eds.) 2014. Biogeographic Atlas of the Southern Ocean. Scientific Committee on Antarctic Research, Cambridge, 480 pp

Ropert-Coudert Y, Chiaradia A, Ainley D, Barbosa A, Boersma PD, Brasso R, Dewar M, Ellenberg U, García-Borboroglu P, Emmerson L, Hickcox R, Jenouvrier S, Kato A, McIntosh RR, Lewis P, Ramírez F, Ruoppolo V, Ryan PG, Seddon PJ, Sherley RB, Vanstreels RET, Waller LJ, Woehler EJ, Trathan PN (2019) Happy Feet in a Hostile World? The Future of Penguins Depends on Proactive Management of Current and Expected Threats. *Frontiers in Marine Science* 6 : 248.

Gutt J, Isla E, Bertler AN, Bodeker GE, Bracegirdle TJ, Cavanagh RD, Comiso JC, Convey P, Cummings V, De Conto R, De Master D, di Prisco G, d'Ovidio F, Griffiths H, Khan AL, López-Martínez J, Murray AE, Nielsen UN, Ott S, Post A, Ropert-Coudert Y, Saucède T, Scherer R, Schiaparelli S, Schloss IR, Smith CR, Stefels J, Stevens C, Strugnell JM, Trimbom S, Verde C, Verleyen E, Wall DH, Wilson NG, Xavier JC (2018) Cross-disciplinarity in the advance of Antarctic ecosystem research. *Marine Genomics* 37: 1-17, doi : 10.1016/j.margen.2017.09.006

Xavier JC, Brandt A, Ropert-Coudert Y, Badhe R, Gutt J, Havermans C, Jones C, Costa ES, Lochte K, Schloss IR, Kennicutt MC II, Sutherland WJ (2016) Future Challenges in Southern Ocean Ecology Research. *Frontiers in Marine Science* 3: 94 doi: 10.3389/fmars.2016.00094

Hays GC, Ferreira L, Sequeira AMM, Meekan MG, Duarte CM, Bailey H, Bailleul F, Bowen WD, Caley MJ, Costa DP, Eguíluz VM, Fossette S, Friedlaender AS, Gales N, Gleiss AC, Gunn J, Harcourt R, Hazen EL, Heithaus MR, Heupel M, Holland K, Horning M, Jonsen I, Kooyman GL, Lowe CG, Madsen PT, Marsh H, Phillips RA, Righton D, Ropert-Coudert Y, Sato K, Shaffer S, Simpfendorfer CA, Sims DW, Skomal G, Takahashi A, Trathan PN, Wikelski M, Womble JN, Thums M (2016) Key questions in marine megafauna movement ecology. *Trends in Ecology and Evolution* 31(6): 463-475 doi: 10.1016/j.tree.2016.02.015

BioSketch: Heather Lynch
Associate Professor of Ecology & Evolution,
Stony Brook University, USA



Dr. Heather Lynch is a quantitative ecologist and an Associate Professor at Stony Brook University with a joint appointment in the Department of Ecology & Evolution and the Institute for Advanced Computational Science. Dr. Lynch's research is focused on the distribution and abundance of Antarctic wildlife, particularly Antarctic penguins, and the development of decision support tools to provide up-to-date information to Antarctic stakeholders. Dr. Lynch currently serves as Principal Investigator for a large, multi-institution National Science Foundation award tasked with building the cyberinfrastructure required to unite high resolution commercial imagery and high-performance computing for imagery-enabled science in the polar regions. Dr. Lynch has led the development of the Mapping Application for Penguin Populations and Projected Dynamics (MAPPPD; penguinmap.com), an interactive search engine designed to facilitate the development of Visitor Guidelines and the design and monitoring of protected areas. Dr. Lynch has served two terms on the Science & Operations Committee of the University of Minnesota's Polar Geospatial Center, and currently serves as that committee's chair. Dr. Lynch has an A.B. in Physics from Princeton University, and M.A. in Physics from Harvard University, and a Ph.D. in Organismic and Evolutionary Biology from Harvard University.

Che-Castaldo, C., S. Jenouvrier, C. Youngflesh, K. Shoemaker, G. Humphries, P. McDowall, L. Landrum, M. Holland, Y. Li, R. Ji, **H.J. Lynch**. 2017. Pan-Antarctic analysis aggregating spatial estimates of Adélie penguin abundance reveals robust dynamics despite stochastic noise. *Nature Communications* 8: 832.

Lynch, M., C. Foley, L. H. Thorne, and **H. J. Lynch**. 2016. Improving the use of biological data in Antarctic management. *Antarctic Science* 28(6): 425-431.

Lynch, H.J., R. White, R. Naveen, A.D. Black, M.S. Meixler, and W.F. Fagan. 2016. In stark contrast to widespread declines along the Scotia Arc, a survey of the South Sandwich Islands finds a robust seabird community. *Polar Biology* 39: 1615-1625.

Lynch, H. J., and M.R. Schwaller. 2014. Multi-sensor cross validation of Adélie penguin detection and abundance estimation. *PLoS ONE* 9(11): e113301.

Lynch, H.J., and M.A. LaRue. 2014. First global survey of Adélie penguin populations. *The Auk* 131(4): 457-466.

Lynch, H.J., N. Ratcliffe, J. Passmore, E. Foster, P.N. Trathan. 2013. Sensitivity analysis identifies high influence sites for estimates of penguin krill consumption on the Antarctic Peninsula. *Antarctic Science* 25(1): 19-23.

Biosketch: Pete Convey

Individual Merit Scientist, British Antarctic Survey, United Kingdom

Peter Convey is a terrestrial ecologist with over 30 years experience of working with the British Antarctic Survey and in a wide range of polar environments (19 Antarctic summers and one winter, multiple Arctic field or teaching periods). He has broad and diverse research interests, with over 360 publications (current H Index 48, Web of Science), covering a range of topics including:



- Biodiversity and biogeography of polar terrestrial invertebrates, plants and microbes
- Life history and ecophysiological strategies of polar terrestrial biota
- Polar ecosystems as models of the past and future global consequences of climate change
- Palaeobiogeographical reconstruction of Antarctica
- Human impacts, conservation and management in Antarctica

Pete is an 'Individual Merit' (IMP) senior research scientist at BAS, where he is deputy leader of the core 'Biodiversity, Evolution and Adaptation' Team, as well as being a member of the BAS Science Strategy team, where he has responsibility for international interactions. He is very active in the development of national and international Antarctic science priorities and collaborative research programmes, in particular through the Scientific Committee on Antarctic Research (SCAR). Until recently, he chaired the SCAR Development Council, and he is Deputy Co-Chair of the SCAR research programme 'State of the Antarctic Ecosystem'. He is a member of the SCAR Advisory Group on Antarctic Climate Change and the Environment. In the UK, he has been a member of the National Committee on Antarctic Research since 2005, and of All Party Parliamentary Groups - on Biodiversity 2010-2015, and The Polar Regions 2016 to present.

Selected relevant outputs in last 5 years

- 1) Turner, J. et al. 2014. Antarctic Climate Change and the Environment – An Update. *Polar Record* **50**, 237-259.
- 2) Convey, P. et al. 2014. The spatial structure of Antarctic biodiversity. *Ecological Monographs* **84**, 203-244.
- 3) Chong, C.-W., Pearce, D.A. & Convey, P. 2015. Emerging spatial patterns in Antarctic prokaryotes. *Frontiers in Microbiology* **6**, 1058. doi: 10.3389/fmicb.2015.01058
- 4) Hughes, K.A., Pertierra, L.R., Molina-Montenegro, M.A. & Convey, P. 2015. Biological invasions in Antarctica: what is the current status and can we respond? *Biodiversity and Conservation* **24**, 1031-1055.
- 5) Hughes, K.A. Ireland, L., Convey, P. & Fleming, A.H. 2016. Assessing the effectiveness of specially protected areas for conservation of Antarctica's botanical diversity. *Conservation Biology* **30**, 113-120.
- 6) Convey, P. 2017. Antarctic Biodiversity. *Reference Module in Life Sciences*. Elsevier. Doi: 10.1016/B978-0-12-809633-8.02182-8
- 7) Coetzee, B.W.T., Convey, P. & Chown, S.L. 2017. Expanding the protected area network in Antarctica is urgent and readily achievable. *Conservation Letters* doi: 10.1111/conl.12342.

Biosketch: Mandy Lombard
DST/NRF Chair: Marine Spatial Planning
Nelson Mandela University
South Africa



Conservation biologist Mandy Lombard holds a DST/NRF Professorship in Marine Spatial Planning at Nelson Mandela University in South Africa. She focuses on applied research that can be implemented for effective sustainable-use outcomes, and has a special interest in systematic conservation planning (SCP), systems analysis and social-ecological systems. She has a PhD in Zoology from the University of Cape Town (1989) and has worked in terrestrial, coastal and marine systems in the USA, Australia, Southern Africa, and the Western Indian and Southern Oceans. Mandy has 28 years of experience in local, national and international conservation assessments and plans, and is a key member of the South African team that mainstreamed SCP into policy and practice. In the Southern Ocean and Antarctica she led the planning for the South Africa's Prince Edward Islands Marine Protected Area and has been instrumental in mainstreaming SCP methods into CCAMLR. To date she has authored over 40 consultancy reports and over 80 scientific outputs with over 5500 citations. She has contributed to over 160 science workshops and conferences, with six of them as Keynote or Plenary speaker and written almost 20 popular articles and policy briefs. In 2013 the Thompson ratings rated her as one of the six most cited ecologists in Africa. She is an editor of the journal *Conservation Letters* and her current work ranges from biophysical mapping of previously unsurveyed marine environments; to developing decision-support tools for trade-off analyses; to policy development for marine spatial planning and integrated ocean management.

Selected peer-reviewed outputs of relevance to SCAR/CEP:

- Knight, A.T., Driver, A., Cowling, R.M., Maze, K., Desmet, P.G., Lombard, A.T., et al. 2006. Designing systematic conservation assessments that promote effective implementation: best practice from South Africa. *Conservation Biology*, 20(3), pp.739-750.
- Lombard, A.T., Reyers, B., Schonegevel, L.Y., Cooper, J., Smith-Adao, L.B., Nel, D.C., et al, 2007. Conserving pattern and process in the Southern Ocean: designing a marine protected area for the Prince Edward Islands. *Antarctic Science*, 19(1), pp.39-54.
- Knight, A.T., Smith, R.J., Cowling, R.M., Desmet, P.G., Faith, D.P., Ferrier, S., Gelderblom, C.M., Grantham, H., Lombard, A.T., et al. 2007. Improving the key biodiversity areas approach for effective conservation planning. *BioScience*, 57(3), pp.256-261.
- Knight, A.T., Cowling, R.M., Rouget, M., Balmford, A., Lombard, A.T. and Campbell, B.M., 2008. Knowing but not doing: selecting priority conservation areas and the research–implementation gap. *Conservation biology*, 22(3), pp.610-617.
- Kirkman, S.P., Holness, S., Harris, L.R., Sink, K.J., Lombard, A.T., Kainge, P., et al. 2019. Using Systematic Conservation Planning to support Marine Spatial Planning and achieve marine protection targets in the transboundary Benguela Ecosystem. *Ocean & Coastal Management*, 168, pp.117-129.
- Lombard, A.T., Ban, N.C., Smith, J.L., Wood, S.A., Lester, S.E., Sink, K.J., et al. 2019. Practical approaches and advances in spatial tools to achieve multi-objective marine spatial planning. *Frontiers in Marine Science*, 6, p.166.
- Lombard, A.T., Dorrington, R.A., Ortega-Cisneros, K., Penry, G.S., Pichegru, L., Reed, J.R., et al. 2019. Key challenges in advancing an ecosystem-based approach to marine spatial planning under economic growth imperatives. *Frontiers in Marine Science*, 6, p.146.