

## Les publications 2020 de la ZATA

Angelier F., Chastel O., Lendvai A.Z., Parenteau C., Weimerskirch H., Wingfield J.C. (2020) When do older birds better resist stress? A study of the corticosterone stress response in Snow petrels. *Biology Letters*, 16, 20190733. DOI: 10.1098/rsbl.2019.0733

Barbraud C., Delord K. (2020) Selection against immigrants in wild seabird populations. *Ecology Letters*, 24, 84-93. DOI:10.1111/ele.13624

Barbraud C., Delord K., Bost C.-A., Chaigne A., Marteau C., Weimerckirch H. (2020) Population trends of penguins in the French Southern Territories. *Polar Biology*, 43, 835-850. DOI: 10.1007/s00300-020-02691-6

Barbraud C., Chaigne A., Loubon M., Lamy O., Le Bouard F. (2020) An estimate of the South Georgia diving petrel *Pelecanoides georgicus* population at Ile de La Possession, Crozet archipelago. *Antarctic Science*, 32, (4), 248-254. DOI: 10.1017/S095410202000019X

Bestley S., Ropert-Coudert Y., Bengtson Nash S., Brooks C., Cotté C., Dewar M., Friedlaender A.S., Jackson J.A., Labrousse S., Lowther A.D., McMahon C.R., Phillips R., Pistorius P.A., Puskic P.S., de A. Reis A.O., Reisinger R.R., Santos M.M., Tarsisz E., Tixier P., Trathan P.N., Wege M., Wienecke B. (2020) Marine Ecosystem Assessment for the Southern Ocean: seabirds and marine mammals in a changing climate. *Frontiers in Ecology and Evolution, section Conservation*, 8, 338. DOI: 10.3389/fevo.2020.566936

Carpenter-Kling T., Pistorius P., Reisinger R., Cherel Y., Connan M. (2020) A critical assessment of marine predator isoscapes within the southern Indian Ocean. *Movement Ecology*, 8, 29. DOI: 10.1186/s40462-020-00208-8

Carravieri A., Bustamante P., Labadie P., Budzinski H., Chastel O., Cherel Y. (2020) Trace elements and persistent organic pollutants in chicks of 13 seabird species from Antarctica to the subtropics. *Environment International*, 134, 105225. DOI: 10.1016/j.envint.2019.105225

Clay T. A., Joo R., Weimerskirch H., Phillips R. A., Ouden O. Den, Basille M., Clusella-Trullas S., Assink J. D., Patrick S. C. (2020) Sex-specific effects of wind on the flight decisions of a sexually dimorphic soaring bird. *Journal of Animal Ecology*, 89, (8), 1811-1823. DOI: 10.1111/1365-2656.13267

Collet J., Weimerskirch H. (2020) Albatrosses can memorize locations of predictable fishing boats but favour natural foraging. *Proceedings of the Royal Society B: Biological Sciences*, 287, 1932, 20200958. DOI: 10.1098/rspb.2020.0958

Collet J., Prudor A., Corbeau A., Mendez L., Weimerskirch H. (2020) First explorations: ontogeny of central-place foraging directions in two tropical seabirds. *Behavioral Ecology*, 31, (3), 815-825. DOI: 10.1093/beheco/araa028

Corbeau A., Prudor A., Kato A., Weimerskirch H. (2020) Development of flight and foraging behaviour in a juvenile seabird with extreme soaring capacities. *Journal of Animal Ecology*, 89, 1, 20-28. DOI: 10.1111/1365-2656.13121

Cox S., Authier M., Orgeret F., Weimerskirch H., Guinet C. (2020) High mortality rates in a juvenile free-ranging marine predator and links to dive and forage ability. *Ecology and Evolution*, 10(1):410-430. DOI: 10.1002/ece3.5905.

Delord K., Kato A., Tarrowx A., Orgeret F., Cotté C., Ropert-Coudert Y., Cherel Y., Descamps S. (2020) Antarctic petrels 'on the ice rocks': wintering strategy of an Antarctic seabird. *Royal Society Open Science* 7(4), 191429. DOI: 10.1098/rsos.191429

Dupont S., Barbraud C., Chastel O., Delord K., Parenteau C., Ribout C., Angelier F. (2020) Do repeated captures and handling affect phenotype and survival of growing Snow Petrel (*Pagodroma nivea*). *Polar Biology*, 43, 637-646. DOI: 10.1007/s00300-020-02666-7

Fabri-Ruiz S., Danis B., Navarro N., Koubbi P., Laffont R., Saucède T. (2020) Benthic Ecoregionalization of the Southern Ocean supports current proposals of Antarctic Marine Protected Areas under IPCC scenarios of climate change. *Global Change Biology*, 26(4), 2161-2180. DOI: 10.1111/gcb.14988

Fromant A., Miskelly C. M., Arnould J. P. Y., Bost C.-A. (2020) Artificial burrows as a tool for long-term studies of diving petrels. *Polar Biology*, 43(5), 435-442. DOI: 10.1007/s00300-020-02645-y

Fromant A., Bost C.-A., Bustamante P., Carravieri A., Cherel Y., Delord K., Eizenberg Y. H., Miskelly C. M., Arnould J. P. Y. (2020) Temporal and spatial differences in the postbreeding behaviour of a ubiquitous Southern Hemisphere seabird, the common diving petrel. *Royal Society Open Science*, 7(11), 200670. DOI: 10.1098/rsos.200670

Gamble A., Bazire R., Delord K., Barbraud C., Jaeger A., Gantelet H., Thibault E., Lebarbenchon C., Lagadec E., Tortosa P., Weimerskirch H., Thiebot J.-B., Garnier R., Tornos J. Boulinier T. (2020) Predator and scavenger movements among and within endangered seabird colonies: Opportunities for pathogen spread. *Journal Applied Ecology*, 57(2) 367-378. DOI: 10.1111/1365-2664.13531

Gamble A., Garnier R., Chambert T., Gimenez O., Boulinier T. (2020) Next generation serology: integrating cross-sectional and capture-recapture approaches to infer disease dynamics. *Ecology* 101, e02923. DOI: 10.1002/ecy.2923

Gamble A., Weimerskirch H., Boulinier T. (2020) Seabirds blinded by ticks. *Frontiers in Ecology and the Environment (EcoPics)*, 18(6), 322. DOI: 10.1002/fee.2237.

Godet C., Robuchon M., Leroy B., Cotté C., Baudena A., Da Silva O., Fabri-Ruiz S., Lo Monaco C., Sergi S., Koubbi P. (2020) Matching zooplankton abundance and pelagic bioregions. *Deep-Sea Research Part I*, 163: 103347. DOI: 10.1016/j.dsr.2020.103347

Guillaumot C., Danis B., Saucède T. (2020) Selecting environmental descriptors is critical for modelling the distribution of Antarctic benthic species. *Polar Biology*, 43, 1363–1381. DOI : 10.1007/s00300-020-02714-2

Guillaumot C., Moreau C., Danis B., Saucède T. (2020) Extrapolation in species distribution modelling. Application to Southern Ocean marine species. *Progress in Oceanography*, 188, 102438. DOI: 10.1016/j.pocean.2020.102438

Hicks O., Kato A., Angelier F., Wisniewska D., Hambly C., Speakman J., Marciaiu C., Ropert-Coudert Y. (2020) Penguin power: acceleration predicts energy expenditure in a fat, flightless, diving bird. *Scientific Reports*, 10, 21493. DOI: 10.1038/s41598-020-78025-7

Hindell M., Reisinger R., Ropert-Coudert Y., Huckstadt L., Trathan P., Bornemann H., Charrassin J.-B., Shown S., Costa D. P., Danis B., Lea M. A., Thompson D., Torres L., Van De Putte A., Alderman R., Andrews-Goff V., Arthur B., Ballard G., Bengtson J., Bester M., Blix A. S., Boehme L., Bost C.-A., Boveng P., Cleeland J., Constantine R., Corney S., Crawford R., Dalla Rosa L., De Bruyn P. J. N., Delord K., Descamps S., Double M. C., Emmerson L., Fedak M., Friedlaender A., Gales N., Goebel M., Goetz K., Guinet C., Goldsworthy S., Harcourt R., Hinke J., Jerosch K., Kato A., Kerry K., Kirkwood R., Kooyman G., Kovacs K., Lawton K., Lowther A., Lydersen C., Lyver P., Makhado A., Marquez M., McDonald B., McMahon C., Muelbert M., Nachtsheim D., Nicholls K., Nordøy E., Olmastroni S., Phillips R., Pistorius P., Plötz J., Pütz K., Ratcliffe N., Ryan P., Santos M., Southwell C., Staniland I., Takahashi A., Tarroux A., Trivelpiece W., Wakefield E., Weimerskirch H., Wienecke B., Xavier J., Wotherspoon S., Jonsen I., Raymond B. (2020) Tracking of marine predators to protect Southern Ocean ecosystems. *Nature*, 580, 87–92. DOI: 10.1038/s41586-020-2126-y

Iles D. T., Lynch H., Ji R., Barbraud C., Delord K., Jenouvrier S. (2020) Sea ice predicts long-term trends in Adélie penguin population growth, but not annual fluctuations: Results from a range-wide multi-scale analysis. *Global Change Biology*, 26, 3788-3798. DOI:10.1111/gcb.15085

Jaeger A., Gamble A., Lagadec E., Lebarbenchon C., Bourret V., Tornos J., Barbraud C., Lemberger K., Delord K., Weimerskirch H., Thiebot J.-B., Bouludier T., Tortosa P. (2020) Impact of annual bacterial epizootics on albatross population on a remote island. *EcoHealth*, 17, 194-202. DOI: 10.1007/s10393-020-01487-8

Jansen J., Dunstan P.K., Hill N.A., Koubbi P., Melbourne-Thomas J., Causse R., Craig, J.R. (2020) Integrated assessment of the spatial distribution and structural dynamics of deep benthic marine communities. *Ecological applications*, 30(3) e02065. DOI:10.1002/eap.2065.

Jenouvrier S., Holland M., Iles D., Labrousse S., Landrum L., Garnier J., Caswell H., Weimerskirch H., LaRue M., Ji R. (2019). The Paris Agreement objectives will likely halt future declines of emperor penguins. *Global Change Biology*, 26(3): 1170-1184. DOI: 10.1111/gcb.14864.

Joliet F., van Tilbeurgh V. (2020) La valeur d'existence du monde vivant selon les Inuits du Nunavik et les Occidentaux aux Kerguelen. *Annales de Géographie*, 732(2) : 31-52.

Kriesell H. J., Le Bohec C., Cerwenka A.F., Hertel M., Robin J.-P., Ruthensteiner B., Gahr M., Aubin T., Düring D. N. (2020) Vocal tract anatomy of king penguins: Morphological traits of two-voiced sound production. *Frontiers in Zoology*, 17:5. DOI: 10.1186/s12983-020-0351-8

Lebouvier M., Lambret P., Garnier A, Frenot Y, Vernon P, Renault D. (2020) Spotlight on the invasion of a carabid beetle on an oceanic island over a 100 year period. *Scientific Reports*, 10, 17103. DOI: 10.1038/s41598-020-72754-5

Levy H., Fiddaman S.R., Vianna J.A., Noll D., Clucas G.V., Sidhu J.K.H., Polito M.J., Bost C.A., Phillips, R.A., Crofts S., Miller G.D., Pistorius P., Bonadonna F., Le Bohec C., Barbosa A., Trathan P., Rey A.R., Frantz L.A.F., Hart T., Smith A.L. (2020) Evidence of pathogen-induced immunogenetic selection across the large geographic range of a wild seabird. *Molecular Biology and Evolution*, 37(6), 1708-1726. DOI: 10.1093/molbev/msaa040

Michelot C., Kato A., Raclot T., Shiomi K., Goulet P., Bustamante P., Ropert-Coudert Y. (2020) Sea-ice edge is more important than closer open water access for foraging Adélie penguins: evidence from two colonies. *Marine Ecology Progress Series* 640, 215-230. DOI: 10.3354/meps13289

- Michelot C., Kato A., Raclot T., Ropert-Coudert Y. (2020) Adélie penguins foraging consistency and site fidelity are conditioned by breeding status and environmental conditions. *Plos ONE*, 16(1), e0244298. DOI: 10.1371/journal.pone.0244298
- Morley S.A., Abele D., Barnes D.K.A., Cardenas C.A., Cotté C., Gutt J., Henley S.F., Hofer J., Hughes K.A., Martin S.M., Moffat C., Raphael M., Stammerjohn S., Suckling C., Tulloch V.J.D., Waller C.L. (2020) Global drivers on Southern Ocean ecosystems: changing physical environments in an Earth system. *Frontiers in Marine Science*, 7:547188. DOI: 10.3389/fmars.2020.547188
- Ouisse T., Day E., Laville L., Hendrickx F., Convey P., Renault D. (2020) Effects of elevational range shift on the morphology and physiology of a carabid beetle invading the sub-Antarctic Kerguelen Islands. *Scientific Reports*, 10, 1234. DOI: 10.1038/s41598-020-57868-0
- Patrick S. C., Corbeau A., Reale D., Weimerskirch H. (2020) Coordination in parental effort decreases with age in a long-lived seabird. *Oikos*, 129, 1763-1772. DOI: 10.1111/oik.07404
- Pertierra L.R., Segovia N.I., Noll D., Martinez P.A., Pliscoff P., Barbosa A., Aragón P., Rey A.R., Pistorius P., Trathan P., Polanowski A., Bonadonna F., Le Bohec C., Bi K., Wang-Claypool C.Y., Gonzalez-Acuña D., Dantas G.P.M., Bowie R.C.K., Poulin E., Vianna J.A. (2020) Cryptic speciation in gentoo penguins is driven by geographic isolation and regional marine conditions: Unforeseen vulnerabilities to global change. *Diversity and Distributions*, 26(8), 958-975. DOI: 10.1111/ddi.13072
- Quillfeldt P., Weimerskirch H., Delord K., Cherel Y. (2020) Niche switching and leapfrog foraging: movement ecology of sympatric petrels during the early breeding season. *Movement Ecology*, 8, 23. DOI: 10.1186/s40462-020-00212-y
- Renault D. (2020) A Review of the phenotypic traits associated with insect dispersal polymorphism, and experimental designs for sorting out resident and disperser phenotypes. *Insects*, 11, 214. DOI: 10.3390/insects11040214
- Renedo M., Bustamante P., Cherel Y., Pedrero Z., Tessier E., Amouroux D. (2020) A “seabird-eye” on mercury stable isotopes and cycling in the Southern Ocean. *Science of the Total Environment*, 742, 140499. DOI: 10.1016/j.scitotenv.2020.140499
- Ropert-Coudert Y., Van de Putte A., Reisinger R., Bornemann H., Charrassin J.B., Costa D.P., Danis B., Huckstadt L., Jonsen I., Lea M.A., Thompson D., Torres L., Trathan P., Wotherspoon S., Ainley D., Alderman R., Andrews-Goff V., Arthur B., Ballard G., Bengtson J., Bester M., Blix A.S., Boehme L., Bost C.A., Boveng P., Cleeland J., Constantine R., Crawford R., Dalla Rosa L., de Bruyn P.J.N., Delord K., Descamps S., Double M.C., Emmerson L., Fedak M., Friedlaender A., Gales N., Goebel M., Goetz K., Guinet C., Goldsworthy S., Harcourt R., Hinke J., Jerosch K., Kato A., Kerry K., Kirkwood R., Kooyman G., Kovacs K., Lawton K., Lowther A., Lydersen C., Lyver P., Makhado A., Márquez M., McDonald B., McMahon C., Muelbert M., Nachtsheim D., Nicholls K., Nordøy E., Olmastroni S., Phillips R., Pistorius P., Plötz J., Pütz K., Ratcliffe N., Ryan P., Santos M., Southwell C., Staniland I., Takahashi A., Tarroux A., Trivelpiece W., Wakefield E., Weimerskirch H., Wienecke B., Xavier J., Raymond B., Hindell M. (2020) The retrospective analysis of Antarctic tracking data project. *Nature Scientific Data* 7, 94. DOI: 10.1038/s41597-020-0406-x
- Sergi S., Baudena A., Cotté C., Ardyna M., Blain S., d'Ovidio F. (2020) Interaction of the Antarctic Circumpolar Current with seamounts fuels moderate blooms but vast foraging grounds for multiple marine predators. *Frontiers in Marine Science*. 7, 416. DOI: 10.3389/fmars.2020.00416

Sommeville M., Dias M. P., Weimerskirch H., Davies T. E. (2020) Projected migrations of southern Indian Ocean albatrosses as a response to climate change. *Ecography*, 43, 1683-1691. DOI: 10.1111/ecog.05066

Tarroux A., Weimerskirch H., Wang S.-H., Bromwich D., Cherel Y., Kato A., Ropert-Coudert Y., Varpe O., Yoccoz N., Descamps S. (2016) Flexible flight response to challenging wind conditions in a commuting Antarctic seabird: do you catch the drift? *Animal Behaviour*, 113, 99-112. DOI: 10.1016/j.anbehav.2015.12.021

Trathan P. N., Wienecke B., Barbraud C., Jenouvrier S., Kooyman G., Le Bohec C., Ainley D. G., Ancel A., Zitterbart D. P., Chown S. L., LaRue M., Cristofari R., Younger J., Clucas G., Bost C.-A., Brown J. A., Gillett H. J., Fretwell P. T. (2020) The emperor penguin - Vulnerable to projected rates of warming and sea ice loss. *Biological Conservation*, 241: 108216. DOI: 10.1016/j.biocon.2019.108216

Van de Vijver B., Scholberg P., Lebouvier M. (2020) *Pinnularia schoelynckiana*, a new limnoterrestrial diatom species (Bacillariophyta) from the sub-Antarctic Iles Kerguelen (southern Indian Ocean). *Botany Letters*, 167(1): 42-49. DOI: 10.1080/23818107.2019.1675185

Vianna J.A., Fernandes F.A.N., Frugone M.J., Figueiró H.V., Pertierra L.R., Noll D., Bi K., Wang-Claypool C.Y., Lowther A., Parker P., Le Bohec C., Bonadonna F., Wienecke B., Pistorius P., Steinfurth A., Burrige C.P., Dantas G.P.M., Poulin E., Simison W.B., Henderson J., Eizirik E., Nery M.F., Bowie R.C.K. (2020) Genome-wide analyses reveal drivers of penguin diversification. *Proceedings of the National Academy of Sciences*, 36, 22303-22310. DOI: 10.1073/pnas.2006659117

Viblanc V. A., Schull Q., Stier A., Durand L., Lefol E., Robin J.-P., Zahn S., Bize P., Criscuolo F. (2020). Foster rather than biological parental telomere length predicts offspring survival and telomere length in king penguins. *Mol. Ecol.*, 29 (16) 3154-3166. DOI: 10.1111/mec.15485.

Weimerskirch H., Collet J., Corbeau A., Pajot A., Hoarau F., Marteau C., Filippi D., Patrick S. C. (2020) Ocean sentinel albatrosses locate illegal vessels and provide the first estimate of the extent of nondeclared fishing. *PNAS Proceedings of the National Academy of Sciences of the United States of America*, 117 (6), 3006-3014. DOI: 10.1073/pnas.1915499117

Winterl A., Richter S., Houstin A., Nesterova A.P., Bonadonna F., Schneider W., Fabry B., Le Bohec C., Zitterbart D.P. (2020) MicrObs – A customizable time-lapse camera for ecological studies, *HardwareX*, 8, e00134. DOI: 10.1016/j.ohx.2020.e00134