

SCIENTIFIC OUTPUT OF THE BRANCH: FISHERIES MANAGEMENT OF THE DEPARTMENT OF ENVIRONMENT, FORESTRY AND FISHERIES (DEFF)

2020

This document lists the scientific output of the Fisheries Management Branch for 2020, arranged by output category. Figures in brackets represent the output for the previous two years, 2019 and 2018, respectively, and are included for comparison. From late March 2020 onwards, travel and physical meetings were severely curtailed by restrictions associated with the COVID-19 pandemic, which affected certain categories of output. In the category 'peer-reviewed publications' there were 56 (41, 30) papers, a substantial increase compared with the previous two years. Given the time-lag associated with the publication process, it is possible that output in this category does not reflect the effects of the pandemic to the same extent as that in certain other categories. There were 11 (12, 9) documents in the category 'theses/dissertations/tertiary projects', none of which were DEFF-authored but all of which were DEFF-supervised or co-supervised. There were 20 (50, 11) documents in the category 'book chapters, published reports and popular articles'. Although this represents a considerable decline compared with 2019, the output in that year was strongly influenced by two particular types of periodic published report, *The IUCN Red List of Threatened Species* and the *South African National Biodiversity Assessment 2018*. There were only 11 (40, 27) 'contributions to symposia and conferences, and public presentations', a category of output that was severely affected by the pandemic. Presentations were made in person prior to the lockdown of late March 2020, or virtually thereafter. There were 17 (64, 53) 'contributions to workshops, short courses, and management and scientific bodies, and unpublished technical reports', another pandemic-affected category. Of these, 8 were contributions to virtual meetings of regional fisheries management organisations, the *Indian Ocean Tuna Commission (IOTC)* (6) and the *International Commission for the Conservation of Atlantic Tunas (ICCAT)* (2). Finally, there were 55 (59, 68) unpublished working group documents. This last category represents the output of the research component of the Branch in terms of its line function to provide scientific advice for resource management. The number of contributions is very similar to previous years, suggesting that the output of the working groups was consistent, despite the pandemic.

Peer-reviewed Publications (names of DEFF staff shown in bold)

- Adams L, Maneveldt G, Green A, Karenyi N, **Parker D**, Samaai T, **Kerwath SE**. 2020. Rhodolith bed discovered off the South African coast. *Diversity* 12: article 125.
- Bakir A, **van der Lingen CD**, Preston-Whyte F, **Bali A**, **Geja Y**, Barry J, Mdazuka Y, Mooi G, Doran D, Tooley F, Harmer R, Maes T. 2020. Microplastics in commercially important small pelagic fish species from South Africa. *Frontiers in Marine Science* 7: article 574663.
- Cano I, Ryder D, Webb S, Jones B, Brosnahan C, Carrasco N, Bordinier B, Furones D, Preto T, Carella F, Chollet B, Arzul I, Cheslett D, Lohrmann KB, Ward G, Carballal MJ, Marigomez I, Mortensen S, **Christison KW**, Christie L, Green M, Feist SW. 2020. Cosmopolitan distribution of *Endozoicomonas*-like organisms and other intracellular bacteria associated with rickettsia-like infection in marine molluscs. *Frontiers in Microbiology* 11: article 577481.
- Claassens L, Adams JB, Barnes R, Miranda N, van Niekerk L, **Lamberth S**. 2020. The Knysna Estuary: ecological status, threats and the future. *African Journal of Aquatic Science* 45: 65–82.
- Cyrus MD**, Bolton JJ, **Macey BM**. 2020. The use of stable $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$ isotopes to track the incorporation of important dietary ingredients into the gonads of the sea urchin *Tripneustes gratilla*. *Aquaculture* 26: 174–185.
- Daly R, **Parker D**, Cliff G, Jordaan GL, Nomfundo N, Bennett RH, Mann BQ. 2020. Long-term catch trends and risk assessment of the Critically Endangered white-spotted wedgefish (*Rhynchobatus djiddensis*) from South Africa. *Aquatic Conservation: Marine and Freshwater Ecosystems* 31: 777–788.
- Friedman K, Braccini M, Bjerregaard-Walsh M, Bonfil R, Bradshaw CJA, Brouwer S, Campbell I, Coelho R, Cortés E, Dimmlich W, Frisk MG, Kingma I, McCully Phillips SR, O'Cruidain C, **Parker D**, Shepherd S, Tovar-Ávila J, Yokawa K. 2020. Informing CITES Parties: strengthening science-based decision-making when listing marine species. *Fish and Fisheries* 21: 13–31.
- Gouws G, **Kerwath SE**, Potts WM, James NC, Vine NG, Cowley PD. 2020. High genetic diversity and limited spatial structure in an endangered, endemic South African sparid,

- the red steenbras *Petrus rupestris*. *African Journal of Marine Science* 42: 295–306.
- Green AN, Cooper JAG, Dlamini NP, Dladla NN, **Parker D**, **Kerwath SE**. 2020. Relict and contemporary influences on the postglacial geomorphology and evolution of a current swept shelf: the Eastern Cape Coast, South Africa. *Marine Geology* 427: article 106230.
- Haupt M, Winker H, **Parker D**, **Kerwath SE**. 2020. Are South African linefishes recovering and what makes them prone to overexploitation? *African Journal of Marine Science* 42: 261–273.
- James NC, Adams JB, Connell AD, **Lamberth SJ**, MacKay CF, Snow G, van Niekerk L, Whitfield AK. 2020. High flow variability and storm events shape the ecology of the Mbashe Estuary, South Africa. *African Journal of Aquatic Science* 45: 131–151.
- Jiménez S, Domingo A, Winker H, **Parker D**, Gianuca D, Neves T, Coelho R, **Kerwath SE**. 2020. Towards mitigation of seabird bycatch: large-scale effectiveness of night setting and Tori lines across multiple pelagic longline fleets. *Biological Conservation* 247: article 108642.
- Kainge P, Kirkman S, Estevao V, **van der Lingen C**, Uanavi U, Kathena JN, van der Plas A, **Githaiga-Mwiciigi J**, Makhado A, Nghimwatia L, Endjambi T, Paulus S, Kalola M, Antonio M, Tjizoo B, Shikongo T, Nsiangango S, Uahengo T, Bartholomae C, Mqoqi M, Hamukaya H. 2020. Fisheries yields, climate change and ecosystem-based management of the Benguela Current Large Marine Ecosystem. *Environmental Development* 36: article 100567.
- Lindberg C, Griffiths CL, **Anderson RJ**. 2020. Colonisation of South African kelp-bed canopies by the alien mussel *Mytilus galloprovincialis*: extent and implications of a novel bio-invasion. *African Journal of Marine Science* 42: 167–176.
- Lipiński LR, Mwangombe CH, **Durholtz D**, **Yemane D**, **Githaiga-Mwiciigi J**, Sauer WHH. 2020. Age estimates of chokka squid *Loligo reynaudii* off South Africa and their use to test the effectiveness of a closed season for conserving this resource. *African Journal of Marine Science* 42: 461–471.
- Madibana MJ**, **Fouché CH**, Mnisi CM. 2020. Challenges facing aquaculture entrepreneurs in South Africa and possible solutions. *African Journal of Agriculture, Nutrition and Development* 20: 16689–16702.
- Madibana MJ**, Mlambo V, **Lewis B**, Uys L. 2020. Dietary seaweed does not alter fatty acids profile and concentration in South African juvenile dusky kob (*Argyrosomus japonicus*, Sciaenidae) filets. *Journal of Applied Animal Research* 48: 7–13.
- Madibana MJ**, Mwanza M, **Lewis BR**, Toefy R, **Fouche CH**, Mlambo V. 2020. Black soldier fly larvae meal as a fishmeal substitute in juvenile dusky kob diets: effect on feed utilization, growth performance, and blood parameters. *Sustainability* 12: article 9460.
- Maduna SN, Hull KL, Farrell ED, Boomer JJ, Veríssimo A, Marino IA, Mazzoldi C, Zane L, Wintner SP, Chesalin MV, **da Silva C**. 2020. Historical biogeography of smoothhound sharks (genus *Mustelus*) of Southern Africa reveals multiple dispersal events from the Northern Hemisphere. *Systematics and Biodiversity* 18: 633–645.
- Malige F, Patris J, Buchan SJ, Stafford KM, **Shabangu F**, Findlay K, Hucke-Gaete R, Neira S, Clark CW, Glotin H. 2020. Inter-annual decrease in pulse rate and peak frequency of Southeast Pacific blue whale song types. *Scientific Reports* 10: article 8121.
- Maureaud AA, Frelat R, Pécuchet L, ... **Fairweather TP**, ... et al. 2020. Are we ready to track climate-driven shifts in marine species across international boundaries? – A global survey of scientific bottom trawl data. *Global Change Biology* 27: 220–236.
- Mazor T, Pitcher CR, Rochester W, Kaiser MJ, Hiddink JG, Jennings S, Amoroso R, McConnaughey RA, Rijnsdorp AD, Parma AM, Suuronen P, Collie J, Sciberras M, Atkinson L, **Durholtz D**, Ellis JR, Bolam SG, Schratzberger M, Couce E, Eggleton J, Garcia C, Kainge P, Paulus S, Kathena JN, Gogina M, van Denderen PD, Keller AA, Horness BH, Hilborn R. 2020. Trawl fishing impacts on the status of seabed fauna in diverse regions of the globe. *Fish and Fisheries* 22: 72–86.
- McGrath A, Hermes J, Moloney C, Roy C, Cambon G, Herbet S, **van der Lingen CD**. 2020. Investigating connectivity between two sardine stocks off South Africa using a high-resolution IBM: retention and transport success of sardine eggs. *Fisheries Oceanography* 29: 137–151.
- Mlambo MC, Blanckenberg M, **Parker D**, Motitsoe SN, Reed C. 2020. Protected and un-protected urban wetlands have similar invertebrate communities: a case study from Cape Town, South Africa. *PLoS ONE* 15: e0233889.
- Nashima FP, Strydom NA, Connan M, **Lamberth SJ**. 2020. Stable isotopes reveal trophic linkages among fish species utilizing the Orange River Estuary Continuum. *Food Webs* 24: e00145.
- Nhlane LT, Mnisi CM, Mlambo V, **Madibana MJ**. 2020. Effect of seaweed-containing diets on visceral organ sizes, carcass characteristics, and meat quality and stability of Boschveld indigenous hens. *Poultry Science* 100: 949–956.
- Nhlane LT, Mnisi CM, Mlambo V, **Madibana MJ**. 2020. Nutrient digestibility, growth performance, and blood indices of Boschveld chickens fed seaweed-containing diets. *Animals* 10: article 1296.
- Onomu AJ, **Cyrus MD**, Bolton JJ, **Macey BM**, Vine N. 2020. The effect of fresh seaweed and a formulated diet supplemented with seaweed on the growth and gonad quality of the collector sea urchin, *Tripneustes gratilla*, under farm conditions. *Aquaculture Research* 51: 4087–4102.
- Parker D**, **Coetzee JC**, **Winker H**, **van der Lingen CD**. 2020. Accounting for linefish dependency in the management of South African small pelagic fisheries. *African Journal of Marine Science* 42: 183–194.
- Pitcher GC**, Cembella AD, Krock B, **Macey BM**, **Mansfield L**. 2020. Do toxic *Pseudo-nitzschia* species pose a threat to aquaculture in the southern Benguela eastern boundary upwelling system? *Harmful Algae* 99: article 101919.
- Pitcher GC**, Louw DC. 2020. Harmful algal blooms of the Benguela Eastern Boundary Upwelling System. *Harmful Algae* 102: article 101898.
- Purdon J, **Shabangu FW**, Pienaar M, Somers MJ, Findlay K. 2020. Cetacean species richness in relation to anthropogenic impacts and areas of protection in South Africa's mainland Exclusive Economic Zone. *Ocean and Coastal Management* 197: article 105292.
- Purdon J, **Shabangu FW**, Pienaar M, Somers MJ, Findlay KP. 2020. South Africa's newly approved marine protected areas have increased the protected modelled habitat of nine odontocete species. *Marine Ecology Progress Series* 633: 1–21.
- Purdon J, **Shabangu FW**, **Yemane D**, Pienaar M, Somers MJ, Findlay K. 2020. Species distribution modelling of Bryde's whales, humpback whales, southern right whales, and sperm whales in the southern African region to inform their conservation in expanding economies. *PeerJ* 8: e9997.
- Rothman MD**, Anderson RJ, Kandjengo L, Bolton JJ. 2020. Trends in seaweed resource use and aquaculture in South Africa and Namibia over the last 30 years. *Botanica Marina*

- Sakamoto T, **van der Lingen CD**, Shirai K, Ishimura T, **Geja Y**, **Petersen J**, Komatsu K. 2020. Otolith $\delta^{18}\text{O}$ and microstructure analyses provide further evidence of population structure in sardine *Sardinops sagax* around South Africa. *ICES Journal of Marine Science*. doi:10.1093/icesjms/fsaa130.
- Samaai T, Kelly M, Ngwakum B, Payne R, Teske PR, Janson L, **Kerwath SE**, **Parker D**, Gibbons MJ. 2020. New Latrunculiidae (Demospongiae, Poecilosclerida) from the Agulhas ecoregion of temperate southern Africa. *Zootaxa* 4896: 409–442.
- Santa Marta A, Ferreira JG, **Pitcher GC**, Lencart e Silva J. 2020. Sustainable shellfish aquaculture in Saldanha Bay, South Africa. *African Journal of Marine Science* 42: 151–166.
- Schulze MJ, von der Heyden S, Japp D, **Singh L**, **Durholtz D**, Kapula VK, Ndjaula HON, Henriques R. 2020. Supporting fisheries management with genomic tools: a case study of kingklip (*Genypterus capensis*) off Southern Africa. *Frontiers in Marine Science* 7: article 557146.
- Shabangu FW**, Andrew RK. 2020. Clicking throughout the year: sperm whale clicks in relation to environmental conditions off the west coast of South Africa. *Endangered Species Research* 43: 475–494.
- Shabangu FW**, Andrew RK, Findlay K. 2021. Acoustic occurrence, diel-vocalizing pattern and detection ranges of southern right whale gunshot sounds off South Africa's west coast. *Marine Mammal Science* 37: 733–750.
- Shabangu FW**, Andrew RK, **Yemane D**, Findlay KP. 2020. Acoustic seasonality, behaviour and detection ranges of Antarctic blue and fin whales under different sea ice conditions off Antarctica. *Endangered Species Research* 43: 21–37.
- Shabangu FW**, Charif RA. 2020. Short moan call reveals seasonal occurrence and diel-calling pattern of crabeater seals in the Weddell Sea, Antarctica. *Bioacoustics*. <https://doi.org/10.1080/09524622.2020.1819877>.
- Shabangu FW**, Findlay K, Stafford KM. 2020. Seasonal acoustic occurrence, diel-vocalizing patterns and bioduck call-type composition of Antarctic minke whales off the west coast of South Africa and the Maud Rise, Antarctica. *Marine Mammal Science* 36: 658–675.
- Tixier P, Burch P, Massiot-Granier F, Ziegler P, Welsford D, Lea M-A, Hindell MA, Guinet C, Wotherspoon S, Gasco N, Péron C, Duhamel G, Arangio R, Tascheri R, **Somhlaba S** Arnould JPY. 2020. Assessing the impact of toothed whale depredation on socio-ecosystems and fishery management in wide-ranging subantarctic fisheries. *Reviews in Fish Biology and Fisheries* 30.
- Uren RC, **van der Lingen CD**, Bothma J, Bouwman H. 2020. Differences in metal compositions and concentrations of sympatric predatory fish and squid from the South Atlantic Ocean. *African Zoology* 55: 278–291.
- Uren RC, **van der Lingen CD**, Kylin H, Bouwman H. 2020. Concentrations and relative compositions of metallic elements differ between predatory squid and filter-feeding sardine from the South Indian and South Atlantic oceans. *Regional Studies in Marine Science* 35: article 101137.
- van der Heever GM, **van der Lingen CD**, Leslie RW, Gibbons MJ. 2020. Spatial and ontogenetic variability in the diet and trophic ecology of two co-occurring catsharks (Scyliorhinidae) off South Africa. *African Journal of Marine Science* 42: 423–438.
- van Deventer H, van Niekerk L, Adams J, Dinala MK, Gangat R, **Lamberth SJ**, Lotter M, Mbona N, MacKay F, Nel JL, Ramjukadh C-L, Skowno A, Weerts SP. 2020. National Wetland Map 5: an improved spatial extent and re-presentation of inland aquatic and estuarine ecosystems in South Africa. *Water SA* 46: 66–79.
- van Niekerk L, Adams JB, James N, **Lamberth S[J]**, Mackay F, Rajkaran A, Turpie J, Weerts S, Whitfield AK. 2020. An Estuary Ecosystem Classification that encompasses biogeography and a high diversity of types in support of protection and management. *African Journal of Aquatic Science* 45: 199–216.
- Whitfield AK, Attwood CG, Cowley PD, **Lamberth SJ**, Mann BQ. 2020. No-take estuarine-protected areas: the missing armour for the conservation of fishes. *Koedoe* 62: a1648.
- Winker H**, Carvalho F, Thorson JT, Kell LT, **Parker D**, Kapur M, Sharma R, Booth AJ, **Kerwath SE**. 2020. JABBA-Select: incorporating life history and fisheries' selectivity into surplus production models. *Fisheries Research* 222: article 105355.
- Wright AG, Griffiths CL, **Fairweather TP**. 2020. Distribution and abundance patterns of two parapagurid hermit crabs (Crustacea: Decapoda: Anomura) along the west and south coasts of South Africa. *African Journal of Marine Science* 42: 177–183.
- Wu Q, Schlag SS, **van der Lingen CD**, Bouwman H, Vetter W. 2020. Polyhalogenated compounds (halogenated natural products and PoPs) in sardine (*Sardinops sagax*) from the South Atlantic and Indian Oceans. *Journal of Agriculture and Food Chemistry* 68: 6084–6091.
- Yemane D**, Kirkman SP, Samaai T. 2020. Use of openly available occurrence data to generate biodiversity maps within the South African EEZ. *African Journal of Marine Science* 42: 109–121.

Theses/Dissertations/Tertiary Projects

- Beukes B. 2020. Examining intra- and interspecific variability in the diet and carbon and nitrogen stable isotope ratios of kingklip and monkfish caught off the West and South coasts of South Africa. MSc thesis, University of the Western Cape, South Africa. Supervisors: Gibbons MJ, **van der Lingen CD**.
- Brink M. 2020. Genetic studies for sustainable aquaculture of the sea urchin, *Tripneustes gratilla*. PhD thesis, University of Stellenbosch, South Africa. Supervisors: **Macey BM**, Wilding RR, Rhode C, **Cyrus MD**.
- De Jager K. 2020. Microorganisms associated with *Ulva* grown in abalone effluent water: implications for biosecurity. MSc thesis, University of Cape Town, South Africa. Supervisors: **Macey BM**, Bolton JJ.
- Maapea AD. 2020. Microbiome of dusky kob (*Argyrosomus japonicus*) eggs and hatchery water and efficacy of various chemicals for egg disinfection. MSc thesis, University of Fort Hare, South Africa. Supervisors: **Macey BM**, Vine NG.
- Meiklejohn A. 2020. Spatial mapping to identify ichthyofaunal conservation hot spots in the Knysna Estuary. BSc Hons thesis, Rhodes University, South Africa. Supervisors: Childs A, Meiklejohn I, Smith K, James N, Potts W, **Lamberth SJ**.
- Nashima FP. 2020. Trophic ecology and interactions of marine, freshwater and estuarine fishes along the Orange River Estuary continuum. PhD thesis, Nelson Mandela University, South Africa. Supervisors: **Lamberth SJ**, Strydom NA.
- Nicholle N. 2020. Managing *Ichthyophonus* in multi-species exhibits at the Two Oceans Aquarium. MSc thesis, University of the Western Cape, South Africa. Supervisors: **Christison KW**, Cole G, Gibbons MJ.
- Senyolo T. 2020. Assessment of selected DNA quantification methods for reliable and rapid tetraploidy verification in larval

- Clarias gariepinus* (Teugels, 1982). MSc thesis, Stellenbosch University, South Africa. Supervisor: Fouche CH.
- Sigam S. 2020. Age and growth, sexual maturity, and carbon and nitrogen stable isotope ratios of chub mackerel (*Scomber* spp.) off South Africa. MSc thesis, University of the Western Cape, South Africa. Supervisors: Gibbons MJ, **van der Lingen CD**.
- Thibeli N. 2020. Qualitative and quantitative analysis of the carotenoid composition of the cultured sea urchin *Tripneustes gratilla* gonads in relation to gonad colour. BSc Hons thesis, University of Western Cape, South Africa. Supervisors: **Cyrus MD**, Beukes DR, Maneveldt GW.
- Wurdeman BM. 2020. The evaluation and development of diagnostic tools for the detection of *Ichthyophonus hoferi* in fish host tissue samples. MSc thesis, University of the Western Cape, South Africa. Supervisors: **Christison KW**, Cole G, Gibbons MJ.
- ## Book Chapters, Published Reports and Popular Articles
- Arendse C, **Parker D**. 2020. White stumpnose in Saldanha Bay – from plentiful to a population under threat. *SANParks Research Report 2019/2020*. Pretoria, South Africa: South African National Parks.
- Attwood C, **Parker D**. 2020. De Hoop catch statistics now online. *Tagging News* No. 33. Durban, South Africa: Oceanographic Research Institute.
- Cortés E, Bowlby H, Carlson J, Coelho R, Domingo A, Forselledo R, Jagger C, Mas F, **Parker D**, Santos C, Semba Y, Taylor N, Zhang X. 2020. Preliminary sustainability assessment for fishing effects (SAFE) of pelagic longline fisheries on porbeagle sharks and identification of F-based biological reference points. *Collective Volume of Scientific Papers. International Commission for the Conservation of Atlantic Tunas (ICCAT) 77*: 148–168.
- Durholtz MD, Atkinson LJ, Attwood CG, **Fairweather TP**, Japp D, Leslie RW, Sink KJ, Smith M, Wilkinson SJ. 2020. South Africa – an overview of the demersal trawl fisheries. In: *FAO (2020) Report of the Workshop on Use of Best Available Science in Developing and Promoting Best Practices for Trawl Fishing Operations in Africa, 20–25 March 2017, Marrakech, Morocco. FAO Fisheries and Aquaculture Report* No. 1244. Rome: Food and Agriculture Organisation of the United Nations: pp 55–64.
- Kerwath SE**, **da Silva C**, Kock A, Sink K, Domingues A, Sharma S, **Langa Z**, **Pheeha S**. 2020. Review of the South African National Plan of Action for the Conservation and Management of Sharks. Report prepared for the Department of Environment, Forestry and Fisheries.
- Pollom R, Bennett R, **da Silva C**, Ebert DA, Gledhill K, Leslie R, McCord ME, **Winker H**. 2020. *Dasyatis chrysonota*. The IUCN Red List of Threatened Species 2020: e.T161643A124520303.
- Pollom R, **da Silva C**, Fernando S, Leslie R, McCord ME, **Winker H**. 2020. *Mustelus palumbes*. The IUCN Red List of Threatened Species 2020: e.T60247A124455981.
- Pollom R, **da Silva C**, Fernando S, Leslie R, **Winker H**. 2020. *Leucoraja wallacei*. The IUCN Red List of Threatened Species 2020: e.T161492A124495127.
- Pollom R, **da Silva C**, Gledhill K, Leslie R, McCord ME, **Winker H**. 2020. *Acroteriobatus annulatus*. The IUCN Red List of Threatened Species 2020: e.T60163A124446397.
- Pollom R, **da Silva C**, Gledhill K, Leslie R, McCord ME, **Winker H**. 2020. *Haploblepharus edwardsii*. The IUCN Red List of Threatened Species 2020: e.T39345A124403633.
- Pollom R, **da Silva C**, Gledhill K, Leslie R, McCord ME, **Winker H**. 2020. *Haploblepharus fuscus*. The IUCN Red List of Threatened Species 2020: e.T39346A124403821.
- Pollom R, **da Silva C**, Gledhill K, Leslie R, McCord ME, **Winker H**. 2020. *Raja ocellifera*. The IUCN Red List of Threatened Species 2020: e.T124396693A124552547.
- Pollom R, **da Silva C**, Gledhill K, Leslie R, McCord ME, **Winker H**. 2020. *Triakis megalopterus*. The IUCN Red List of Threatened Species 2020: e.T39362A124406649.
- Pollom R, **da Silva C**, Gledhill K, Leslie R, **Winker H**. 2020. *Squalus acutipinnis*. The IUCN Red List of Threatened Species 2020: e.T124488765A124537550.
- Pollom R, Gledhill K, **da Silva C**, Leslie R, McCord ME, **Winker H**. 2020. *Halaelurus natalensis*. The IUCN Red List of Threatened Species 2020: e.T44613A124435463.
- Pollom R, Gledhill K, **da Silva C**, McCord ME, **Winker H**. 2020. *Poroderma pantherinum*. The IUCN Red List of Threatened Species 2020: e.T161515A124498131.
- Samaai T, Sink K, Kirkman S, Atkinson L, Florence W, **Kerwath S**, **Parker D**, **Yemane D**. 2020. The marine animal forests of South Africa: importance for bioregionalization and marine spatial planning. In: Rossi S, Bramante L (eds), *Perspectives on the marine animal forests of the world*. Cham, Switzerland: Springer. pp 17–62.
- van der Lingen CD**, **Lamberth SJ**. 2020. KwaZulu-Natal sardine run. *Environment Quarterly* April–June 2020: 24–25.
- van Niekerk L, Adams JB, Taljaard S, Huizinga P, Lamberth SJ. 2020. Chapter 6. Advancing mouth management practices in the Groot Brak Estuary, South Africa. In: Slinger JH, Taljaard S, d'Hont F (eds), *Complex coastal systems – transdisciplinary learning on international case studies*. Delft, The Netherlands: Delft Academic Press. pp 89–104.
- Winker H**, Mourato B, **Parker D**, Sant'Ana R, Kimoto A, Ortiz M. 2020. Preliminary stock assessment of South Atlantic albacore tuna (*Thunnus alalunga*) using the Bayesian state-space surplus production model JABBA. *Collective Volume of Scientific Papers. International Commission for the Conservation of Atlantic Tunas (ICCAT) 77*: 352–376.
- ## Contributions to Symposia and Conferences, and Public Presentations
- Becker F, Gridley T, **Shabangu F**, Wittmer H, Marsland S. 2020. Bioacoustics research in Africa: a systematic review. *2nd African Bioacoustics Community Conference, 2–5 November 2020, online virtual conference*. (oral presentation)
- Coetzee V, **Parker D**, **Kerwath SE**, **Lamberth S**. 2020. Grunting in murky waters: morphological and ethological discrimination among functional stocks of spotted grunter, an estuarine-dependent fish. *2nd African Bioacoustics Community Conference, 2–5 November 2020, online virtual conference*. (oral presentation)
- Cyrus MD**, Bolton JJ, Wozniak D, de Vos B, **Macey BM**. 2020. Echinoculture development in South Africa: an overview. *Aquaculture America 2020, 9–12 February 2020, Hawaii, USA*. (oral presentation)
- Macey BM**. 2020. Ensuring food security in Africa through sustainable aquaculture: the role of Integrated Multi-Trophic Aquaculture (IMTA) systems. *Ensuring food security in Africa through sustainable aquaculture, 14th October 2020, webinar*. (oral presentation)
- Macey BM**, Bolton JJ, **Cyrus MD**, De Jager K. 2020. Integration of *Ulva* in land-based aquaculture systems: benefits, risks and implications for sea urchin aquaculture. *Aquaculture America 2020, 9–12 February 2020, Hawaii, USA*. (oral presentation)

- Mansfield L, Pitcher G, Seanego K.** 2020. Phytoplankton biodiversity of the southern Benguela. *32nd Congress of the Phycological Society of Southern Africa, 12–16 January 2020, Wavecrest, KwaZulu-Natal, South Africa.* (oral presentation)
- Pitcher GC.** 2020. HABs – their prevalence and impacts in the southern Benguela. *32nd Congress of the Phycological Society of Southern Africa, 12–16 January 2020, Wavecrest, KwaZulu-Natal, South Africa.* (oral presentation)
- Purdon J, Pienaar M, **Shabangu FW**, Somers MJ, Findlay KP. 2020. Modelled sound exposure levels for marine fauna encountered during a seismic survey in Algoa Bay, South Africa. *2nd African Bioacoustics Community Conference, 2–5 November 2020, online virtual conference.* (oral presentation)
- Seanego K, Pitcher G, Mansfield L, Du Randt A, Probyn T.** 2020. Phytoplankton communities and the productivity of the Vanderkloof Dam. *32nd Congress of the Phycological Society of Southern Africa, 12–16 January 2020, Wavecrest, KwaZulu-Natal, South Africa.* (oral presentation)
- Shabangu FW.** 2020. Acoustic occurrence and behaviour of marine mammals. *2nd African Bioacoustics Community Conference, 2–5 November 2020.* (virtual invited presentation)
- van der Lingen CD.** 2020. Dynamics of key fish species and top predators in the two Benguela Current sub-systems. *Virtual Symposium on SPACES Marine Projects – BANINO, CASISAC, TRAFFIC, 7 December 2020.* (virtual oral presentation)
- Contributions to Workshops, Short Courses, and Management and Scientific Bodies; Unpublished Technical Reports**
- Coetzee JC.** 2020. Economic considerations for forage fisheries. *AEWA Benguela Current Forage Fish Virtual Workshop, 2–4 November 2020.* (virtual oral presentation)
- da Silva C, Mketsu Q, Kerwath SE.** 2020. South Africa – National Report 2020. *Indian Ocean Tuna Commission, 23rd Scientific Committee Meeting, 7–11 December 2020, online virtual meeting. IOTC–2020-SC23-NR20.*
- Githaiga-Mwiciji J.** 2020. Squid research at DEFF. *SASMA Annual General Meeting, 29 October 2020, Gqeberha (Port Elizabeth), South Africa.* (virtual oral presentation)
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