

FINAL BASIC ASSESSMENT REPORT FOR THE PROPOSED PROSPECTING IN SEA CONCESSION AREA 7C BY TRANS ATLANTIC DIAMONDS (PTY) LTD

Trans Atlantic Diamonds (Pty) Ltd
Office 1603 Portside
4 Bree Street
Cape Town, Western Cape, 8001



TRANS ATLANTIC
DIAMONDS

APPENDICES

- Appendix 1: EAP & BAR Team CVs
- Appendix 2: Screening Report
- Appendix 3: Marine Specialist Study
- Appendix 4: Heritage Specialist Study
- Appendix 5: Socio-economic Considerations
- Appendix 6: Specialists' CVs
- Appendix 7: Site Map
- Appendix 8: Motivation for no other Alternatives
- Appendix 9: Invitation to Submit Initial Comment & Input
- Appendix 10: Pre-Consultation Meeting
- Appendix 11: Stakeholder Database
- Appendix 12: POPIA Letter
- Appendix 13: BID (Initial & Updated)
- Appendix 14: Invitation to Comment &
proof of notices
- Appendix 15: Official PPP Meeting
- Appendix 16: Emails Received
- Appendix 17: Comments & Responses Table



FINAL BASIC ASSESSMENT REPORT FOR THE PROPOSED PROSPECTING IN SEA CONCESSION AREA 7C BY TRANS ATLANTIC DIAMONDS (PTY) LTD

Trans Atlantic Diamonds (Pty) Ltd
Office 1603 Portside
4 Bree Street
Cape Town, Western Cape, 8001



TRANS ATLANTIC
DIAMONDS

Appendix 1: EAP and BAR team CVs

Cheruscha Swart
Barry Clark
Sisanda Dalasile
Julia Ndou
Michael Armitage

Anchor Environmental Consultants
8 Steenberg House, Silverwood Close, Tokai, South Africa
www.anchorenvironmental.co.za



CURRICULUM VITAE

BARRY MALCOLM CLARK

BORN: 25 August 1968; Livingstone, Zambia

AGE: 52 YEARS

NATIONALITY: South African, British

ACADEMIC QUALIFICATIONS:

Ph.D. Marine Biology, 1997, University of Cape Town

BSc (Hons) Marine Biology, 1991, University of Cape Town

BSc Zoology and Ocean & Atmosphere Science, 1990, University of Cape Town

OTHER QUALIFICATIONS: Scientific diver, Diving supervisor, Small boat skipper

LANGUAGE PROFICIENCY: English (Excellent), Afrikaans (Good)

COUNTRY EXPERIENCE: South Africa, Namibia, Lesotho, Mozambique, Tanzania, Kenya, Mauritius, Seychelles, Angola, Ghana, Cote d'Ivoire, Nigeria, Liberia, Sierra Leone, Somaliland, Republic of Congo, Egypt, United Arab Emirates, Azerbaijan

POSTAL ADDRESS: 8 Steenberg House, Silverwood Close, Tokai 7945

PHONE: +27-21-7013420

MOBILE: ++27-82 3730521

E-MAIL: barry@anchorencvironmental.co.za

FAX: +27 (0)-21-7015280

EMPLOYMENT HISTORY: 1991-1993 – Scientific Officer, University of Cape Town

2000-2002 – Marine Coordinator, Cape Peninsula National Park

1996-Present - Director, Anchor Environmental Consultants CC

2002-Present – Research Associate, University of Cape Town

SUMMARY PROFILE

Dr Barry Clark has thirty years' experience in marine biological research and consulting on coastal zone and marine issues. He has worked as a scientific researcher, lecturer and consultant and has experience in tropical, subtropical and temperate ecosystems. He is presently Director of an Environmental Consultancy firm (Anchor Environmental Consultants) and Research Associate at the University of Cape Town. As a consultant has been concerned primarily with conservation planning, monitoring and assessment of human impacts on estuarine, rocky shore, sandy beach, mangrove, and coral reef ecosystems as well as coastal and littoral zone processes, aquaculture and fisheries. Dr Clark is the author of 27 scientific publications in class A scientific journals as well as numerous scientific reports and popular articles in the free press. Geographically, his main area of expertise is southern Africa (South Africa, Lesotho, Namibia, Mozambique, Tanzania, Seychelles, Mauritius and Angola), but he also has working experience from elsewhere in Africa (Republic of Congo, Sierra Leone, Liberia, Cote d'Ivoire, Ghana, Nigeria), the Middle East (UAE) and Europe (Azerbaijan, Greenland).

MEMBERSHIP OF PROFESSIONAL BODIES/ORGANISATIONS

- Professional Natural Scientist, registered with the South African Council for Natural Scientific Professions (2004-)
- Professional member of the South African Institute of Ecologists and Environmental Scientists (2000-)
- South African representative to the SURVAS Network (Synthesis and Upscaling of Sea-level Rise Vulnerability Assessment Studies) (2000-)
- Member of the International Association of Impact Assessors (IAIA) (2000-)
- Member of the Subsistence Fisheries Task Group (1999-2000)
- Member of the Subsistence Fisheries Advisory Group (2000-2002)
- Member of the South African Network for Coastal and Oceanic Research (SANCOR) Economics Task Team

STUDENT SUPERVISION

Name	Institution	Degree	Thesis title	Year
Vici Napier	UCT	MSc	Value and management of the subsistence fishery at Knysna Estuary, South Africa	2004-2005
Khara Shine	UCT	MSc	Biogeographic Patterns and Diversity in Demersal Fish off the south and west coasts of South Africa: Implications for Conservation	2006-2007
Bomikazi Tshingana	UKZN	MSc	Relating flora, fauna and environmental parameters of Durban Bay Sandbanks	2017-2018
Josef Shikeva	UNAM	MSc	The use of underwater video footage as a tool in the assessment of mining related impacts on the hard-bottom benthic environment in southern Namibia	2018-2019
Nomcebo Dhlalani	US	MSc	ICP-MS analysis of trace metals in Pacific Oysters (<i>Crassostrea gigas</i>) within the Port of Saldanha, South Africa	2019-2020

SELECTED PROJECT EXPERIENCE

Period	Country	Client	Project, Tasks
2021	South Africa	V& A Waterfront	Economic impact analysis of the proposed Granger Bay Marina
2021	Greenland	DeBeers Marine (Pty) Ltd	Environmental Mitigation Assessment for geophysical surveys off West Greenland
2021	South Africa	Cliff Path Action Group/Ecosense	Environmental impact assessment for a proposed pedestrian path connecting the two parts of the Hermanus Cliff Path
2021	South Africa	IDM Consultants	Environmental impact assessment for the proposed Msimbazi River Estate in KwaZulu-Natal
2020-2021	Sierra Leone	Iluka/Sierra Rutile/Digby Wells	Environmental, Safety and Health Impact Assessment (ESHIA) for mining of the Sembehun group of deposits in the Southern Province of Sierra Leone

Period	Country	Client	Project, Tasks
2020-2021	South Africa	EDTEA KZN	Development of an Estuary Management Plan for the Uthongathi Estuary, KzwaZulu-Natal
2020	South Africa	Department of Forestry, Fisheries and the Environment	Environmental assessment and monitoring for a sea-based Aquaculture Development Zone (ADZ) in Saldanha Bay
2020	South Africa	DeBeers Marine (Pty) Ltd	Near- and far-field effluent dispersion modelling study and impact assessment for a proposed SWRO plant in the Port of Cape Town
2020	South Africa	V&A Waterfront	Dispersion modelling study and environmental impact assessment and for the East Pier District cooling plant in the Port of Cape Town
2020	South Africa	Transnet National Ports Authority, Chand Environmental	Environmental Impact Assessment for a proposed Seawater Reverse Osmosis Plant in the Port of Cape Town
2020	South Africa	IFC World Bank/ Royal Haskoning DHV	Technical, environmental and social due diligence for the Umdloti and Umkhomazi wastewater treatment works (WWTW)
2020	Kenya	Ministry of Water, Sanitation and Irrigation of Kenya / Aurecon	Kenya Water Security And Climate Resilience Project - Development and piloting of a resource directed measures (RDM) Framework for Kenya
2020	South Africa	DeBeers Marine (Pty) Ltd	Specialist environmental assessment of the Namaqua Fossil Forest Marine Protected Area and proposed Ecologically or Biologically Significant Marine Area (EBSA)
2020	South Africa	ATKV/Cape EA Prac	Comparative ecological impact assessment for the ATKV Hartenbos dune stabilisation study
2020	South Africa	Diamond Coastal Aquaculture	Design and implementation of an environmental monitoring programme for an abalone ranching operation at Kleinzee, Northern Cape.
2020	South Africa	TNPA/Chand Environmental	Environmental Impact Assessment for a Reverse Osmosis Desalination Plant in the Port of Cape Town
2020	South Africa	Department Forestry Fisheries & Environment	Implementation of an environmental monitoring programme for the Saldanha Bay Aquaculture Development Zone
2020	South Africa	V&A Waterfront	Environmental impact assessment and dispersion modelling study for the East Pier District cooling plant outfall at the V&A Waterfront, Port of Cape Town
2019-2020	South Africa	City of Cape Town	Design and implementation of an environmental monitoring programme for domestic effluent outfalls offshore of Hout Bay, Camps Bay and Green Point in Cape Town

Period	Country	Client	Project, Tasks
2019	South Africa	Vopak/SRK Consulting	Environmental Impact Assessment for Vopak-Reatile Terminal Richards Bay, a bulk liquid storage and handling facility
2019	South Africa	Rheinmetall Denel Munition	Design and implementation of an environmental monitoring programme for the Rheinmetall Denel Munitions facility in Helderberg
2019	Somaliland	WSP/DP World	Marine specialist study for an Environmental and Social Impact assessment (ESIA) for the upgrade of Berbera Port, Somaliland
2018-2019	Mozambique	Golder/ Sasol	Environmental impact assessment for 2D and 3D seismic surveys and exploratory drilling in Block 16 & 19, offshore in Inhambane Province, Mozambique
2018-2021	South Africa	Mhlathuze Water	Toxicity testing, water, sediment and flora and fauna monitoring for Mhlathuze Water Effluent Pipelines, in Richards Bay, South Africa
2018	South Africa	City of Mhlathuze	Environmental Impact Assessment for construction of a new bridge over the Mzingazi Canal at the Richards Bay Waterfront
2018	Republic of Congo	Kola Potash	Marine ecology impact assessment, baseline studies and toxicity testing for the Kola Potash project, Republic of Congo
2018	South Africa	Sun International/ GCX Analytics	Marine ecology impact assessment for discharge of brine effluent from a Reverse Osmosis desalination plant in Granger Bay
2018	Mozambique	JG Afrika/ Mozal	Estuarine impact assessment for discharge of brine effluent from a Reverse Osmosis desalination plant into Maputo Bay
2018	South Africa	Kleinzee Mariculture	Environmental Impact Assessment for construction and operation of abalone holding tanks and associated infrastructure at Kleinzee.
2018	South Africa	ArcelorMittal Saldanha	Marine ecology impact assessments for the discharge of brine effluent from a Reverse Osmosis desalination plant
2018	South Africa	Diamond Coast Abalone	Environmental Impact Assessment for an Aquaculture Farm in Kleinzee, Northern Cape
2018	South Africa	G7 Renewable Energies (Pty) Ltd	Marine ecology impact assessment for discharge of brine effluent from a Reverse Osmosis desalination plant in Gordon's Bay, South Africa
2018	South Africa	Mainport Africa	Assessment of biofouling community collected from MV Cherry Blossom
2017-2018	Sierra Leone	Iluka/Sierra Rutile (Ltd)	Marine and estuarine specialists studies for an Environmental, Social and Health Impact Assessment (ESHIA) for proposed expansions to Sierra Rutile Limited's mining operations in Sierra Leone
2017	South Africa	Advisian, City of Cape Town	Marine ecology impact assessments for nine desalination plants for the Cape Town Emergency Water Resilience Project

Period	Country	Client	Project, Tasks
2017	South Africa	Hospitality Property Fund	Marine ecology impact assessment and Coastal Waters Discharge Permit application for a desalination plant at the Westin Hotel, Cape Town.
2017	South Africa	GIBB, Transnet National Ports Authority	Strategic Environmental Assessment for Port of Cape Town - Oceanographic and ecological significance and sensitivity of the Port of Cape Town and surrounding areas
2017	South Africa	Shell Downstream South Africa (Pty) Ltd	Specialist marine ecology report for coastal water discharge permit application for Shell Downstream South Africa (Pty) Ltd Bulk Chemicals Storage Facility, Port Elizabeth
2017	South Africa	Viking Fishing (Pty) Ltd	Socio-economic assessment of a 60% reduction in Viking fishing group's allocation in the inshore demersal trawl fishery
2016-2019	South Africa	Department of Water & Sanitation	Classification of and determine the Resource Quality Objectives for significant water resources within (1) the Berg Water Management Area and (2) the Breede Gouritz Water Management Area (2 separate appointments). Project leader on the estuaries component of both projects.
2016-2017	South Africa	SIROCCON Consulting Engineers & Project Managers	Specialist marine impact studies for a proposed Atlantic Salmon farm at Dwarskersbos
2016-2017	South Africa	CEN Environnemental Mangement Unit, Nelson Mandela Metro	Dispersion modelling for the Driftsands Waste Water Treatment Works, Port Elizabeth, South Africa
2016-2017	South Africa	Tongaat Hullet	Marine ecology impact assessment for a proposed beach enhancement initiative at Tinley Manor
2016-2017	South Africa	Nemai Consulting, Transnet National Ports Authority	Marine Impact Assessment for the proposed offshore sand winning for developments within the Port Of Durban, KwaZulu Natal
2016-2017	South Africa	Department of Environmental Affairs	Revision and update of the South African Water Quality Guidelines for Coastal and Marine Waters – 2017. Natural Environment, Mariculture and Industrial Use
2016-2017	South Africa	Royal Society for Protection of Birds	Assessment of the effects of exposure to brodifacoum pellet bait on Tristan Rock Lobster <i>Jasus paulensis</i>
2016-2017	South Africa	Elandsfontein Exploration and Mining (Pty) Ltd	Assessment of the impacts of the Elandsfontein Phosphate Mine on Langebaan Lagoon
2016-2017	South Africa	Department of Agriculture, Forestry, Fisheries	Assessment of catch and effort in the West Coast Rock Lobster recreational fishery
2016-2017	Namibia	Namdeb Diamond Company	Benthic macrofauna and sediment quality monitoring programme for the Mid-water license region, Namibia

Period	Country	Client	Project, Tasks
2016	South Africa	DeBeers Group of Companies	Assessment of mining-related impacts on macrofaunal benthic communities in the Northern Inshore Area of Mining Licence Area MPT 25-2011 and subsequent recovery
2016	South Africa	Advisian, Oiltanking Mogs Saldanha (RF) (Pty) Ltd	Marine ecological specialist study for the proposed HDPE pipeline and sea water intake and discharge for Oiltanking Mogs Saldanha (Rf) (Pty) Ltd
2016	Republic of Congo	Southern Waters, International Finance Corporation	Aquatic Biodiversity Assessment for the Sounda Hydropower Project
2016	South Africa	Southern Cross Salmon	Marine specialist environmental impact report for a proposed salmon and trout sea cage farm Jutten Island Saldanha -
2016	South Africa	Port Owen Marina Authority	Assessment of currents and invertebrate and fish fauna in the Berg Estuary channel and recommendations for disposal of dredge water
2016	Lesotho	Lesotho Highlands Development Authority	Specialist study of freshwater fish populations present in rivers and streams adjacent to the proposed Polihali Dam in the Lesotho Highlands
2016	South Africa	Transnet National Ports Authority	Baseline ecological assessment of marine and estuarine fauna and flora at Pier 1 and Salisbury Island, Port of Durban and an assessment of the potential impacts associated with the upgrade and expansion of the terminal.
2016	South Africa	Transnet National Ports Authority	Assessment of ecosystem goods and services associated with Durban Bay any assessment of potential impacts associated with the development of the Container Terminal at Pier 1 and Salisbury Island
2016	South Africa	ACC Agriculture	Risk assessment for introduction of <i>Camelina savitina</i> as a commercial crop into South Africa
2015	Liberia	Conservation International	Identification and profiling of priority mangrove sites in Liberia through remote sensing and field surveys and identification and delineation of two coastal and marine protected areas
2015	South Africa	AquaTech	Risk assessment for in-water hull cleaning operations in the Port of Durban, South Africa
2015	Tanzania	Aurecon, Schlumberger	Environmental impact assessment for a supply base for Schlumberger in Mtwara port, Tanzania
2015	South Africa	Cape Nature	Environmental flows assessment for the Klein River estuary, South Africa
2015	South Africa	Mossel Bay Municipality	Preparation an estuary management plan for the Hartenbos Estuary
2015	South Africa	Department of Environmental Affairs	Development of an assessment framework for management of effluent discharged from land-based sources to the marine environment in South Africa

Period	Country	Client	Project, Tasks
2015	Seychelles	Raffles Hotel, Aurecon	Assessment of impacts of diesel spill on mangrove forest community on Praslin Island, Seychelles
2014-2016	South Africa	Transnet National Ports Authority	Baseline monitoring programme for all sandbank areas in the Port of Durban.
2014-2015	South Africa	Transnet National Ports Authority	Design and implementation of a water and sediment quality monitoring programme in the Port of Durban
2014-2015	South Africa	Oceana/SRK	Application for a coastal water discharge permit for the Lucky Star Fish Processing Plant, St Helena Bay
2014-2015	South Africa	Coega Development Corporation	Assessment of impacts of waste water discharge from Coega Industrial Development Zone, Algoa Bay
2014-2017	Namibia	DeBeers Marine Namibia	Benthic macrofauna and sediment quality monitoring programme for the Atlantic 1 Mining Licence Area, Namibia
2014-2015	South Africa	Cape Nature	Environmental flow assessment for the Heuningnes estuary, South Africa
2014-2015	South Africa	South African Pelagic Fishing Industry Association	Assessment of the socio-economic impacts of a reduction in the sardine minimum Total Allowable Catch (TAC)
2014-2015	South Africa	Nelson Mandela Bay Metro, GIBB	Assessment of impacts of waste water discharge from a new WWTW at Cape Recife, Algoa Bay
2014	Seychelles	USAID	Implementation of the "reef gardening" approach for restoration of coral reefs on Praslin Island, Seychelles, lost as a result of El Nino and global warming induced bleaching events.
2014	South Africa	Molapong Aquaculture	Risk Assessment for culture of King and Coho salmon in South Africa
2014	South Africa	NWJ Environmental	Impact assessment for a proposed sand mining operation on the Umzumbe Estuary, KwaZulu-Natal
2014	Mozambique	Marine Stewardship Council	Scoping study to assess potential impacts of upgrading the cruise liner facilities at Portuguese Island, Mozambique
2014	South Africa	Bayside Aluminium, WSP	Environmental impact assessment for the decommissioning of the Bayside Aluminium Smelter, Richards Bay
2014	South Africa	Tronnox Namaqua Sands, SRK	Assessment of impacts of a seawater intake for the Tronnox Namaqua Sands mineral processing facility, Northern Cape
2014	South Africa	AquaConcepts	Risk assessment for import of ornamental marine fish species into South Africa
2014	South Africa	Dormac, WSP	Assessment of impact associated with the development of a floating dry dock in the Port of Durban, South Africa
2014	South Africa	Transnet National Ports Authority	Assessment of potential impacts of the proposed Durban Dig Out Port of the annual sardine migration up the East coast of South Africa

Period	Country	Client	Project, Tasks
2014	South Africa	WWF-SA	Design and development of a Fisheries Improvement Project for Small Scale Fisheries in the Kogelberg
2014	South Africa	Tronnox Namaqua Sands, Matzikamma Municipality, SRK	Environmental impact assessment for an aquaculture facility at Doringbaai, Northern Cape
2014	Tanzania	Aurecon	Development of a Spatial Development Framework for the coastal environment in the Mtwara/Mikandani Municipal area, Tanzania
2014	South Africa	WSP/ Engen	Assessment of the impacts of an oil spill on mangrove forest communities in the Port of Richards Bay, South Africa
2014	South Africa	Frontier Rare Earths, Coastal Environmental Services	Assessment of impacts of a seawater intake for the Frontier Rare Earths mineral processing facility, Northern Cape
2014	South Africa	Cape Nature	Rezoning and realignment of borders for Betty's Bay, Goukamma and Robberg marine protected areas in South Africa
2013-2014	South Africa	Paardevelei Properties	Assessment of the likely impacts of associated with a new stormwater management system at Paardevelei
2013-2014	South Africa	iSimangaliso Wetland Park Authority	Assessment of the hydrological, hydrodynamic and ecological functioning of the Lake St Lucia Estuarine System and formulation of recommendations for rehabilitation and improved management of the system.
2013-2014	Lesotho	Lesotho Highlands Development Authority	Assessment of the impacts of land use changes and other pressures related to the construction and operation of the Katse and Mohale Dams on its catchment area and attendant fish populations
2013	South Africa	Cape Nature, Department of Environmental Affairs	Assessment of impacts of an oil spill on sandy beach and rocky intertidal communities in the Goukamma MPA
2013	South Africa	Transnet National Ports Authority	Marine specialist study as part of an EIA for upgrading the General Maintenance Quay (GMQ) in the Port of Saldanha Bay
2013	Namibia	LL Namibia Phosphates	Review and update of a Scoping Report and Environmental Management Plan for prospecting for phosphorus deposits in Mining Licence Area 159 off the coast of Namibia

Period	Country	Client	Project, Tasks
2012-2013	South Africa	Department of Agriculture, Forestry & Fisheries	Biodiversity Risk and Benefit Assessments (BRBAs) for the seven most important alien species used in the aquaculture industry in South Africa including Pacific oyster <i>Crassostrea gigas</i> , Mediterranean mussel <i>Mytilus galloprovincialis</i> , sharptooth catfish <i>Clarius gariepinus</i> , rainbow trout <i>Onchorhynchus mykiss</i> , brown trout <i>Salmo trutta</i> , Nile Tilapia <i>Oreochromis niloticus</i> and Marron <i>Cherax tenuimanus</i> .
2012-2013	South Africa	Abagold (Pty) Lt	Environmental Impact Assessment for the construction and operation of a wave energy converter (WEC), pump assistance pond and effluent pipe turbine for the Abagold abalone farm.
2012-2013	South Africa	East London Industrial Development Zone	Feasibility study for the establishment of an Aquaculture and Biotechnology Business Incubator for the East London Industrial Development Zone.
2012	Mozambique	Consultec Lda	Water quality assessment and toxicity testing for a proposed coal transfer facility in Beira, Mozambique
2012	Mauritius	Mauritius Oceanography Institute	Alien species, and water and sediment quality assessment of Port Louis, Mauritius.
2012	Namibia	Ministry of Environment and Tourism	Study to identify a set of Core National Environmental Indicators Network (NCEIS), Integrated State of Environment Baseline Report (ISoER) for Namibia's Protected Area Network (PAN), and Coastal and Marine Ecosystems.
2012	South Africa	uMkhanyakude District Municipality/ Nemai Consulting	District-Wide Environmental Management Framework for the uMkhanyakude District Municipality
2012	South Africa	Transnet National Ports Authority	Assessment of potential impacts of iron ore oxide (Fe ₂ O ₃) on the marine flora and fauna of Saldanha Bay.
2012	South Africa	Department of Water Affairs/ Nemai Consulting	Environmental Impact Assessment for the Ncwabeni OCS Dam on the Mzimkhulu estuary
2012	South Africa	East London Industrial Development Zone	Seawater Quality Monitoring Program for aquaculture developments in the East London Industrial Development Zone
2012	South Africa	Transnet National Ports Authority/ Nemai Consulting	Environmental Impact Assessment for the deepening, lengthening and widening of Pier 2 in the container terminal of the Port of Durban.
2011	South Africa	City of Cape Town	Development of water quality indices and related reporting tools for Inland and coastal waters of the City of Cape Town

Period	Country	Client	Project, Tasks
2011	South Africa	Overstrand District Municipality/ SSI	Environmental impact assessment for a Waste Water Treatment Works in the Overstrand District Municipality
2010-2013	South Africa	Department of Agriculture, Forestry & Fisheries (DAFF)	Environmental impact assessment for four Marine Aquaculture Development Zones (MADZs) in the Eastern Cape, South Africa.
2010	South Africa	Department of Agriculture, Forestry & Fisheries (DAFF)	Strategic Environmental Assessment (SEA) to identify potential sea-based finfish aquaculture development zones (ADZ) off the South African coastline.
2010	South Africa	Doug Jeffery Environmental Consultants	Environmental impact assessment for an illegal tide pool constructed at Danger Point, Gansbaai.
2010	South Africa	Department of Environmental Affairs & Development Planning, Western Cape Government	Evaluation of boat launching sites in the Western Cape.
2010	South Africa	Department of Environmental Affairs & Development Planning, Western Cape Government	Assessment of the effects of heavy metal accumulation from land based sources on the Diep River Estuary.
2010	South Africa, Namibia	UNDP-GEF Orange-Senqu Strategic Action Programme	Assessment of the impact of changes in the flow regime of the Orange-Senqu River and its impacts on the degradation of the estuary and the broader Benguela Current System.
2010	Tanzania	BRL/ SWECO/ SADC	Baseline description and health assessment for the Rovuma Basin, Tanzania.
2010	South Africa	Water Research Commission, Department of Water Affairs	Update of methods for estimation of freshwater flow requirements for estuaries in South Africa.
2010	South Africa	Chand Environmental	Assessment of the status and sensitivity of the coastal marine environment off Partridge Point on the Cape Peninsula, and likely impacts that would arise from development of the site.
2010	South Africa	Element Consulting Engineers (Pty) Ltd	Environmental impact assessment for a proposed residential and resort development at Trekoskraal on the marine environment.
2009-2011	South Africa	Various companies	Environmental impact assessments for a suite of desalination plants at Sedgfield, Plettenberg Bay, Witsands, Saldanha Bay, and Port Nolloth. (Five separate appointments.)

Period	Country	Client	Project, Tasks
2009-2011	South Africa	Cape Action Plan for People & the Environment (C.A.P.E.)/Cape Nature/Marine & Coastal Management (MCM)	Development of management plans for the Olifants, Berg, Uilkraals, and Great Brak Estuaries, South Africa. (Four separate appointments).
2009-2011	South Africa	WWF-SA, Lotto Programme	Recreational fisheries monitoring programme coordinating a team of 20 fisheries monitors at 6 sites on the South and East coasts of South Africa.
2009-2010	Azerbaijan	United National Development Programme, Azerbaijan Country Office	International consultant appointed to prepare Project Identification Form (PIF) and Project Preparation Grant (PPG) for a GEF medium-size project on the expansion of the marine and coastal protected area network in Azerbaijan.
2009-2010	South Africa	Department of Water Affairs & Forestry	Assessment of the nature, distribution and value of aquatic ecosystem services of the Olifants, Inkomati And Usutu To Mhlathuze Water Management in South Africa.
2009-2010	South Africa	WWF-SA/Cape Action for People and the Environment (C.A.P.E.)	Project leader responsible for the preparation of marine and coastal spatial plans and socio-economic assessments for the Kogelberg Biosphere Reserve and Garden Route Initiative.
2009-2010	South Africa	Department of Water Affairs	Environmental Flow Assessment for the Berg Estuary which including preparing scenario assessments of the likely environmental and socio-economic consequences variable fresh water allocation for the estuary.
2009	South Africa	West Coast District Municipality, Jeffares & Green (Pty) Ltd	Environmental assessment of the Jakkalsvlei estuary, and of ecological impacts of illegal excavation and infilling activities
2009	Global	UNDP	Researcher on an assessment of the impact of climate change on the Global Fisheries sector and opportunities and incentives required for adaptation
2009	South Africa	City of Cape Town	Design of a Coastal Monitoring Programme for the City of Cape Town (City of Cape Town).
2009	South Africa	Sturrock Shipping (Pty) Ltd	Marine ecological expert responsible for assessment of marine fouling on vessel, Rita Knutsen.
2009	South Africa	Doug Jeffery Environmental Consultants	Assessment of the status and sensitivity of the coastal marine environment off Oudekraal on the Cape Peninsula

Period	Country	Client	Project, Tasks
2008-2011	South Africa	Century City Property Owners Association	Assessment of the effectiveness of a fish eradication programme conducted in the Century City wetlands and canals using the ichthyocide rotenone.
2008-2009	Tanzania, Kenya	Programme for the Sustainable Management of the Coastal Zone of the Countries of the Indian Ocean	Design and implementation of training courses and workshops on Information for Fisheries Co-Management in Dar es Salaam, Tanzania and Mombassa, Kenya.
2008	South Africa	Water Research Commission, Fresh Water Consulting Group	Marine specialist on a project to develop a classification system for wetlands in South Africa.
2008	South Africa	Water Research Commission (WRC)	Design and development of an integrated ecological-economic model to be used to assess freshwater flow requirements for the East-Kleinemonde estuary, a temporally open-closed estuary on the East coast of South Africa.
2008	South Africa	DCD-Dorbyl (Pty) Ltd	Environmental audit of Globe Engineering Works (Pty) Ltd, DCD-Dorbyl (Pty) Ltd and Natulis Marine (Pty) Ltd (Nautilus), three engineering companies based in the Port of Cape Town, South Africa
2008	Angola	Tullow Oil Plc	Environmental Impact Assessment, Environmental Overview and identification of Environmental Best Management Practise (BMP) required for seismic surveying and exploratory drilling for offshore oil and gas resources in Blocks 1, Angola.
2008	South Africa	Department of Environmental Affairs & Development Planning/SRK Consulting	Marine and coastal specialist contributing to the preparation of the State of the Environment Report (SoER) for the Western Cape Province, South Africa.
2008	South Africa	CSIR/Transnet National Ports Authority (Transnet-NPA)	Independent consultant appointed to review an Environmental Impact Assessment and Environmental Management Plan for dredging and dredge spoil disposal for the Ben Schoeman Dock, Port Of Cape Town.
2008	South Africa	Transnet National Ports Authority (Transnet-NPA)/SRK/PD Naidoo & Associates	Independent consultant appointed to review Marine Specialist study components of an Environmental Impact Assessment for extension of the iron ore export terminal and associated ore handling facilities in Saldanha Bay, South Africa
2007-2011	South Africa	Resource Ballast Technology (Pty) Ltd	Independent assessor of efficacy of a newly developed ballast water treatment system and evaluation (risk assessment) of the residual toxicity of ballast water treated with the system.

Period	Country	Client	Project, Tasks
2007-2011	South Africa	Department of Environmental Affairs & Tourism: Marine and Coastal Management (DEAT: MCM)	Shore based fisheries monitoring programme designed to assess levels of fishing mortality, stock abundance indices and to evaluate the effectiveness of management measures for the commercial and recreational linefishery, tuna pole and hake handline fishing in South African waters.
2007-2011	South Africa	Department of Environmental Affairs & Tourism: Marine and Coastal Management (DEAT: MCM)	Offshore, boat-based fisheries monitoring programme designed to supply and deploy aboard fishing vessels, competent, suitably trained and equipped scientific observers for the inshore trawl, hake longline and west coast rock lobster fisheries.
2007-2010	Ghana	Tullow Oil Plc	Environmental Impact Assessment, Environmental Overview and identification of Environmental Best Management Practise (BMP) required for seismic surveying and exploratory drilling for offshore oil and gas resources in the Tano shallow water and Deep water blocks in Ghana. (Three separate EIA studies).
2007	South Africa	Shelley Point Breakwater (Pty) Ltd/Doug Jeffery Environmental Consultants	Environmental Impact Assessment for the Shelly Point Small Craft Harbour.
2007	South Africa	University of Cape Town	Project supervisor on a study on fish populations in three False Bay estuaries (Zandvlei, Eerste and Lourens).
2006-2011	Tanzania	International Conservation Union (IUCN)/Pangani Water Basin Office, Tanzania	International mentor of the Estuary Team for a project entitled "Flows for People and the Environment: Supporting Sustainable Land Management in the Pangani Basin (Tanzania)".
2006-2007	South Africa	Cape Action Plan for People & the Environment (C.A.P.E.) and World Wildlife Foundation (WWF)	Project leader responsible for development of a fine scale conservation plan for the Agulhas Marine Bioregion.

Period	Country	Client	Project, Tasks
2006-2007	South Africa	Department of Science and Technology (DST) and the South African Environmental Observation Network (SAEON)	Consultant appointed to lead the process of developing a data management facility for the South African National Antarctica Programme (SANAP) in consultation with the SANAP research and management community.
2006	South Africa	Seaton Thompson and Associates and Tintswalo Atlantic (Pty) Ltd	Environmental Impact Assessment for a proposed guest lodge development at Koeelbaai, under Chapman's Peak Drive, in the Table Mountain National Park (TMNP)
2006	Mozambique	Ministry of Co-ordination of the Environment/ World Bank/European Union	Team leader (Expert level I) appointed to prepare a Country Environmental Profile for Mozambique.
2005-2008	South Africa	Port Nolloth Sea Farms (Pty) Ltd/ Department of Environmental Affairs and Tourism (DEAT)	Assessment of ecological impacts and biological and economic viability of abalone ranching in South African west coast.
2005-2007	Angola	BCLME Programme/ United Nation Development Programme (UNDP)/ UNOPS/Global Environment Facility (GEF)	Assessment of the status of biodiversity along the Angola coastline.
2005-2007	South Africa	Cape Action Plan for People & the Environment (C.A.P.E.), Cape Nature, and Department of Environmental Affairs & Tourism: Marine and Coastal Management (DEAT: MCM)	Biodiversity and economic assessment and development of an integrated conservation plan for CAPE estuaries.

Period	Country	Client	Project, Tasks
2005-2007	Angola, Namibia, South Africa	BCLME Programme/ United Nation Development Programme (UNDP)/ UNOPS/Global Environment Facility (GEF)	Assessment of human capacity, training and infrastructure available within the three countries bordering the BCLME – Angola, Namibia and South Africa.
2007, 2005	South Africa	Transnet-National Ports Authority (Transnet NPA)	Ballast water, flora and fauna survey in the Ports of Durban and Port Elizabeth.
2005	South Africa	Department of Environmental Affairs and Tourism (DEAT)	National State of the Environment Report (SoER) for South Africa.
2005	South Africa	Department of Environmental Affairs and Tourism (DEAT)	Assessment of the marine and coastal tourism potential for the Arniston fishing harbour.
2005	Angola, Namibia, South Africa	Benguela Current Large Marine Ecosystem (BCLME) Programme (UNDP/World Bank)	Development of and operationalisation of an affordable, sustainable and user-friendly State of Ecosystem Information System (SEIS) for the BCLME region (Angola, Namibia, South Africa).
2005	South Africa	National Empowerment Fund (NEF)	Due diligence (feasibility) study to assess the feasibility of a proposed eel aquaculture and processing operation in the Eastern cape, South Africa.
2005	South Africa	Department of Environmental Affairs & Tourism	Supervisor on a project to assess the socio-economic value and ecological impacts of the subsistence fishery for sand and mud prawns, and fish in the Knysna estuary, South Africa
2004-2017	South Africa	Saldanha Bay Water Quality Forum Trust (SBWQMFT)	Preparation of a series of "State of the Bay" Monitoring Programme and Reports for Saldanha Bay and Langebaan Lagoon in 2004, and annually between 2008 and 2017.
2004-2008	South Africa	WWF-SA/South African National Parks	Development and implementation of a coastal monitoring programme for the Table Mountain National Park Marine Protected Area.
2004-2005	South Africa	Department of Environmental Affairs and Tourism (DEAT)	Formulation of recommendations on an appropriate permit fees and permitting systems for recreational SCUBA divers and SCUBA diving tour operators in Aliwal Shoal, Pondoland, Bird Island, Tsitsikamma and Table Mountain National Park Marine Protected Areas (MPAs).
2004	South Africa	I & J	Environmental Impact Assessment for an abalone farm at Danger Point, Western Cape.

Period	Country	Client	Project, Tasks
2004	DRC, Angola, Namibia, South Africa, Mozamb., Tanz., Mauritius, Seychelles	EU-SADC MCS Fisheries Programme	Production of instructional material and the holding of a seminar on the effects of pollutants, illegal fishing methods and the requirements of relevant conventions signed by the SADC states.
2004	South Africa	City of Cape Town	Environmental Impact Assessment for a coastal walkway between St James and Kalk Bay, in False Bay, South Africa.
2004	South Africa	City of Cape Town	Environmental Impact Assessment to assess impacts of an education centre and tidal pool, at Bordjiesrif in False Bay, South Africa.
2004	Mozambique	Southern African Development Community/ Government of Mozambique	Production of a policy document and strategy for fisheries Monitoring Control Surveillance in Mozambique.
2004	South Africa	Botanical Society of South Africa	Preparation of guidelines to assist environmental assessment practitioners in selecting biodiversity specialists for involvement in Environmental Impact
2004	Southern Africa	IPCC/ START Programme	Desktop assessment of the likely impacts of climate change on estuaries in southern Arica.
2004	South Africa	EKZN Wildlife Service/ Department of Environmental Affairs and Tourism (DEAT)	Review and assessment of the management of subsistence fisheries in KwaZulu-Natal, South Africa.
2003-2005	South Africa	Department of Water Affairs & Forestry (DWAFF)	Project manager, estuarine coordinator and fisheries specialist on the Berg River Baseline Monitoring Programme.
2003-2004	South Africa/ Namibia/ Angola	BCLME Programme/ UNDP/ UNOPS/ GEF	Capacity and Needs Assessment for the Benguela Current Large Marine Ecosystem (BCLME) Project involving three countries – Angola, Namibia and South Africa.
2003-2004	South Africa	Makana Marine and Projects	Environmental Impact Assessment for the development of a new ship repair facility in the Port of Cape Town.
2003-2004	South Africa	World Wildlife Fund, South Africa (WWF-SA)	Production of a business plan for the proposed Kogelberg Marine Park.
2003-2004	South Africa	Department of Environmental Affairs and Tourism (DEAT)	Strategic Environmental Assessment to guide the implementation of regulations promulgated under the National Environmental Management Act 1998: Control of Vehicles in the Coastal Zone.

Period	Country	Client	Project, Tasks
2003	South Africa	Global Ballast Programme/ IMO/UNDP/ GEF	Development of a Ballast Water Management Plan for the Port of Saldanha, South Africa.
2003	South Africa, Namibia and Angola	Global International Waters Assessment (GIWA) Programme/ GEF	Global International Water Assessment (GIWA) for the Benguela region (South Africa, Namibia and Angola).
2002-2003	South Africa	Cape Action for People and the Environment / World Bank/ UNDP	Lead consultant on the Marine and Coastal Component of the Cape Action for People and the Environment (C.A.P.E.) programme responsible for the developing components of the Project Concept Document (PCD) and Project Implementation Plan (PIP).
2002-2003	Namibia	Namdeb Diamond Company	Environmental Impact Assessment for the Wet Overburden Mining System in Mining Area 1, Oranjemund, Namibia.
2002-2003	South Africa	Department of Environmental Affairs & Tourism	Assessment of the quantity of abalone caught by recreational fishers during the 2002/2003 fishing season.
2002-2003	South Africa	Water Research Commission, Department of Water Affairs & Forestry	Assessment of the relative contribution and importance of individual estuaries to overall estuarine biodiversity in South Africa.
2002-2003	South Africa	National Ports Authority/ Global Ballast Programme	Baseline survey of subtidal reef biota and reef fish off Jaheel & St Croix Islands, Algoa Bay.
2002	Africa	GEF/UNDP UNESCO/IOC/ACOPS	Regional Technical Coordinator for the Working Group on Sustainable Use of Living Resources as part of Phase 2 of the GEF MSP Sub-Saharan Africa Project (GF/6010-0016): Development and Protection of the Coastal and Marine Environment in Sub-Saharan Africa.
2002	South Africa	Department of Environmental Affairs & Tourism	Acoustic tracking study of the West Coast rock lobster (<i>Jasus lalandii</i>) in the Hermanus Whale Sanctuary, on the south-west coast of South Africa.
2002	Namibia	Namdeb Diamond Company	Environmental assessment of sandy beaches in Mining Area 1, Oranjemund, Namibia and an environmental baseline study in a previously unexploited area on the coast.
2002	South Africa	National Research Foundation	Launch the Marine and Coastal Node of the South African Environmental Observatory Network (SAEON) programme.
2002	South Africa	Department of Environmental Affairs & Tourism	Assessment of sardine migration habitats off the East coast of South Africa.

Period	Country	Client	Project, Tasks
2002	South Africa	Department of Environmental Affairs & Tourism	Fisheries monitoring programme for an experimental hoop-net fishery for west coast rock lobster off Cape Hangklip, South Africa.
2002	South Africa	University of Rhode Island/ History of Marine Animal Populations	Desktop assessment of the likely impacts of climate change on the ecosystem functioning and fisheries of the Benguela ecosystem, South Africa.
2002	Seychelles		Assessment of the status of fisheries, fish stocks, and approaches to fisheries management in the Seychelles
2001-2002, 2009-2010	South Africa	Department of Environmental Affairs & Tourism	Assessment of the quantity of west coast rock lobster caught by recreational fishers during the 2001/2002 and 2009/2010 fishing seasons.
2001-2003	South Africa	Department of Environmental Affairs & Tourism/ Rhodes University	Economic Sectoral Study of the South African Fishing Industry.
2001-2002	South Africa	AECI/SYNEXUS	Assessment of risks to marine life and human health resulting from disposal of contaminated groundwater from the Umbogintwini waste disposal site.
2001	South Africa	GEF/UNDP/IMO Globalballast Programme	Ballast water fauna and flora survey in the Port of Saldanha.
2001	South Africa	Nitrogen Products	Marine specialist on an EIA to assess impacts of effluent disposal on the marine environment from a fertilizer factory.
2001	South Africa	Maribus Industries	Application for a seawater lease and mariculture permit for a Gracilaria farm in St Helena Bay, South Africa
2001	United Arab Emirates	Dubai Municipality/ Martin Mid-East	Assessment of impacts of effluent discharges and shipbuilding activities on Dubai Creek, UAE.
2000-2002	South Africa	South African National Parks	Marine Coordinator Cape Peninsula National Park, responsible for the design and development of a marine component for the newly established Cape Peninsula National Park.
2000-2002	South Africa	Freshwater Consulting Group	Assessment and monitoring changes in the fish community of the Koekdou River following construction of a new dam on the system
2000-2001	Africa	GEF/UNDP UNESCO/IOC/ACOPS	National coordinator for South Africa on Phase 1 of the GEF MSP Sub-Saharan Africa Project (GF/6010-0016): Development and Protection of the Coastal and Marine Environment in Sub-Saharan Africa.
2000-2001	South Africa	SRK Consulting and PD Naidoo and Associates	Environmental Impact Assessment of potential impacts of the extension of the iron ore handling facility in Saldanha Bay on the marine environment and mariculture activities.

Period	Country	Client	Project, Tasks
2000	South Africa	City of Cape Town/ Southern Water Ecological Research and Consulting	Environmental Impact Assessment for the upgrade of a rubble weir and other mouth management options for the Zandvlei estuary.
2000	South Africa	On Track Developments/ Chand Environmental	Environmental Impact Assessment for the redevelopment of the Sea Point Pavilion site, Cape Town
2000	South Africa	City of Cape Town/ Southern Water Ecological Research and Consulting	Freshwater fish specialist on the Zeekoeivlei and Rondevlei restoration project.
2000	Africa	SURVAS	National representative on the SURVAS Network tasked with assessing Vulnerability & Adaptation to Impacts of Accelerated Sea-Level Rise in Africa.
1999-2000	South Africa	United States Department of Energy/ Department of Environmental Affairs and Tourism, South Africa	Assessment of the effects of climate change on marine biodiversity in South Africa.
1999-2000	South Africa	Foundation for Research Development	Assessment of impacts of exploitation of wonderworm <i>Marphysa sanguinea</i> on bouldershore habitats on the Cape Peninsula, South Africa.
1999-2000	South Africa	Department of Environmental Affairs & Tourism, South Africa	National Co-ordinator of the Subsistence Fisheries Programme designed to identify subsistence fishing communities in South Africa, to assess socio-economic profiles and resource harvesting techniques and to provide recommendations for the implementation of appropriate management systems for these fishers.
1999	South Africa	Ridge Management/ Eric van den Honert Environmental Consulting	Environmental Impact Assessment for for the Soetwater Mariculture Project (an abalone and seaweed aquaculture initiative) on the marine environment.
1999	South Africa	City of Cape Town/ Southern Water Ecological Research and Consulting	Environmental Impact Assessment for the construction of a foot bridge over the Zandvlei estuary.
1999	South Africa	City of Cape Town/ Southern Water Ecological Research and Consulting	Environmental Impact Assessment for flood mitigation measures (artificial wetland) on the Silvermine estuary.

Period	Country	Client	Project, Tasks
1999	South Africa	City of Cape Town/ Freshwater Consulting Group	Fish specialist appointed to assess the ecological importance of Zoarvlei (a freshwater wetland) for marine, estuarine and freshwater fish species.
1999	South Africa	City of Cape Town/ Southern Water Ecological Research and Consulting	Environmental Impact Assessment for upgrading the Zandvleit Wate Water Treatment Works on the Eerste estuary.
1999	South Africa	Jakobsbaai Abalone Farm	Assessment of the application of anolytes to control red-tide dinoflagellates <i>Scripsiella trochoidea</i> in the mariculture industry.
1999	South Africa	Southern Water Ecological Research and Consulting	Guidelines for stocking Capricorn Lake (a shallow dendritic lake in the Capricorn Science and Business Park Lake) with fish
1998-1999	Mozambique	ARCO International Oil and Gas Company/ Austral	Environmental Impact Assessment for onshore and offshore seismic exploration and exploratory drilling for oil and gas in Sofala Bay (Beira) area in Mozambique.
1998-1999	South Africa/ Namibia/ Angola	GEF/UNDP/ Benguela Current Large Marine Ecosystem Programme (BCLME)	Production of an "Integrated Overview of Diamond Mining in the Benguela Current Region" as part of the synthesis and assessment of information on the Benguela Current Large Marine Ecosystem (BCLME) project.
1998	Namibia	Government of Namibia/ Desert Research Foundation of Namibia	Environmental Impact Assessment for a new Fishing Port at Möwe Bay, Skeleton Coast, Namibia.
1998	Namibia	Namdeb Diamond Company	Environmental Impact Assessment for the Elizabeth Bay Mine, Lüderitz, Namibia.
1998	South Africa	Marine Diamond Mines Association/ Sue Lane & Robin Carter & Associates	Generic Environmental Baseline Report on the status of the marine environment, fisheries and coastal utilisation in the South African west coast marine diamond 'a' concession areas, surf zone and admiralty strip.
1998	South Africa	Blaauberg Municipality/ World Wide Fund for Nature (WWF-SA)	Assessment of the intensity and impact of bait collecting activities on the ecology of the Diep River estuary, South Africa.
1998	South Africa	De Beers Namaqualand/Gib b Africa	Environmental Impact Assessment for the construction of a bridge across the Buffels estuary near Kleinzee.

Period	Country	Client	Project, Tasks
1997-2012	Namibia	Namdeb Diamond Company	Baseline and Environmental Impact Assessment for beach diamond mining in the Bogenfels Mining Licence Area in the Sperrgebiet, Namibia. Sequential appointment for studies undertaken in 1997, 1998, and annually from 2004-2011.
1997-1998, 2000-2001, 2009-2011	South Africa	Department of Environmental Affairs & Tourism/ Department of Agriculture, Forestry & Fisheries	Implementation of an offshore, boat-based fisheries monitoring programme designed to supply and deploy aboard fishing vessels, competent, suitably trained and equipped scientific observers for the offshore trawl, inshore trawl, hake longline and west coast rock lobster fisheries.
1997-1998	South Africa	Foundation for Research Development/ University of Cape Town	Assessment of the enhanced utilisation and management of demersal fish resources off the east, south and west coasts of South Africa.
1997	United Arab Emirates	Adnoc-Borealis Petrochemicals/Martin Mid-East	Environmental Impact Assessment and Baseline Survey for a new petro-chemicals plant in Dubai, UAE.
1996	South Africa	Rein's Nature Reserve	Assessment of the status of exploited marine species in a small marine reserve near Mossel Bay, South Africa.
1994-1996	South Africa	Sea Fisheries Research Institute/ Worldwide Fund for Nature (SA)	Assessment of the impact of commercial beach-seine netting on the fish and invertebrates in False Bay, South Africa.
1990	South Africa	Seafarm Products	Assessment of the impact of fish predation on the cultured mussel, <i>Mytilus galloprovincialis</i> , in the Seafarm Dam, South Africa.

PUBLICATION RECORD

Thesis

Clark, B.M. 1997. Dynamics and utilization of surf zone habitats by fish in the south-western Cape, South Africa. PhD Thesis, University of Cape Town, 216 pp.

Scientific papers

SHELTON, J.M., CLARK, B.M., SEPHAKA, T. & TURPIE, J.K. 2016. Population crash in Lesotho's endemic Maloti minnow *Pseudobarbus quathlambae* following invasion by translocated smallmouth yellowfish *Lebeobarbus aeneus*. *Aquatic Conservation: Marine and Freshwater Ecosystems*. DOI: 10.1002/aqc.2633.

- Clark, B.M.** 2009. Introduction – The Berg River Baseline Monitoring Programme. Transactions of the Royal Society of South Africa 64(2): 95,
- Clark, B.M.** & S. Taljaard. 2009. Historic changes in inorganic nutrient loading and its effects on water quality biota of the Berg estuary, South Africa. Transactions of the Royal Society of South Africa 64(1) In press
- Clark, B.M.,** Hutchings, K. & Lamberth, S.J. 2009. Long-term variations in composition and abundance of fish in the Berg estuary, South Africa. Transactions of the Royal Society of South Africa 64(2): 238–258.
- Clark, B.M.,** Impson, D. & J. Rall. 2009. Present status and historical changes in the fish fauna of the Berg River, South Africa. Transactions of the Royal Society of South Africa 64(2): 142–163
- Clark, B.M.** 2005. Climate change: A looming challenge for fisheries management in southern Africa. Marine Policy 30 (1): 84-95.
- Clark, B.M.,** Hauck, M., Harris, J., Salo, K. and E. Russell. 2002. Identification of subsistence fishers, fishing areas, resource use and activities. South Africa Journal of Marine Science 24: 425-438.
- Clark, B.M.** 1996. Variation in surf zone fish community structure across a wave exposure gradient. *Est. cstl. Shelf Sci.* 44: 659-674.
- Clark, B.M.** 1996. Marine diamond mining activities off Namibia: do they really pose a threat to island biota? *S.A. Comm. Mar.* 5(3): 16.
- Clark, B.M.** & B.A. Bennett 1993. Are juvenile fish an issue in the trek net controversy? *Fish, fishers and fisheries, Proc. 2nd Mar. Recreational Angling Symp., Durban, October 1992.* Beckley, L.E. & R.P. van der Elst (eds.) *Spec. Publ. oceanogr. Res. Inst. S. Afr.* 2: 157-159.
- Clark, B.M.,** B.A. Bennett & S.J. Lamberth 1994. A comparison of the ichthyofauna of two estuaries and their adjacent surf-zones, with an assessment of the effects of beach-seining on the nursery function of estuaries for fish. *S. Afr. J. mar. Sci.* 14: 121-131.
- Clark, B.M.,** B.A. Bennett & S.J. Lamberth 1994. Assessment of the impact of commercial beach-seine netting on juvenile teleosts in the surf-zone of False bay, South Africa. South Africa Journal of Marine Science 14: 255-262.
- Clark, B.M.,** B.A. Bennett & S.J. Lamberth 1996. Factors affecting spatial variability in seine net catches of fish in the surf-zone of False Bay, South Africa. *Mar. Ecol. Prog. Ser.* 131: 17-34.
- Clark, B.M.,** B.A. Bennett & S.J. Lamberth 1996. Temporal variations in surf-zone fish assemblages from False Bay, South Africa. *Mar. Ecol. Prog. Ser.* 131: 35-47.
- Branch, G.M. and **Clark, B.M.** 2006. Fish stocks and their management: The changing face of fisheries in South Africa. *Marine Policy* 30 (1): 3-17.
- Hutchings, K., **Clark, B.M.,** Atkinson, L.J. & C. G. Attwood. 2008. Evidence of recovery of the linefishery in the Berg River Estuary, Western Cape, South Africa, subsequent to closure of commercial gillnetting. *African Journal of Marine Science* 2008, 30 (3): 507–517.
- Napier V.R., J.K. Turpie & **B.M. Clark.** 2009. Value and management of the subsistence fishery at Knysna estuary, South Africa. *African Journal of Marine Science* In press

- Branch, G.M., May, J., Roberts, B., Russell, E., **Clark, B.M.** 2002. Case studies on the socio-economic characteristics and lifestyles of subsistence and informal fishers in South Africa. *South Africa Journal of Marine Science* 24: 439-462.
- Cockroft, A.C., Sauer, W., Branch G.M., **Clark, B.M.**, Dye, A. H. and E. Russell. 2002 - Assessment of resource availability and sustainability for subsistence fishers in South Africa with a review of resource management procedures. *South Africa Journal of Marine Science* 489-502.
- Griffiths, C. L., L. van Sittert, P. B. Best, A. C. Brown, **B.M. Clark**, P. A. Cook, R. J. M. Crawford, J. H. M. David, B. R. Davies, M. H. Griffiths, K. Hutchings, A. Jerardino, N. Kruger, S. Lamberth, R. Leslie, R. Melville-Smith, R. Tarr & C. D. van der Lingen, 2004. Impacts of human activities on marine animal life in the Benguela – An historical overview. *Oceanogr. Mar. Biol. Ann. Rev.* 42, 303-392.
- Harris, J.M., Branch, G.M., **Clark, B.M.**, Coetzee, C., Dye, A.H., Hauck, M., Johnson, A., Kati-Kati, L., SiqWano-Ndulo, N., and M. Sowman. 2002. Recommendations for the management of subsistence fishers in South Africa. *South Africa Journal of Marine Science* 24: 503-523.
- Harris, J.M., Sowman, M., Branch, G.M., **Clark, B.M.**, Cockroft, A.C., Coetzee, C., Dye, A.H., Hauck, M., Johnston, A., Kati-Kati, L., Maseko, Z., Salo, K., Sauer, W.H.H., Siqwana-Ndulo, N. and J. Beaumont. 2002. The process of developing a management system for subsistence fisheries in South Africa: recognizing and formalizing a marginalized fishing sector in South Africa. *South Africa Journal of Marine Science* 24: 405-424.
- Hauck, M., Sowman, M., Russel, E., **Clark, B.M.**, Harris, J.M., Venter, A., Beaumont, J. and Z. Maseko. 2002. Perceptions of subsistence and informal fishers in South Africa. *South Africa Journal of Marine Science* 24: 464-474
- Lamberth, S.J., B.A. Bennett & **B.M. Clark** 1994. The catch composition of commercial beach-seine fishermen in False Bay, South Africa. *S. Afr. J. mar. Sci.* 14: 69-78.
- Lamberth, S.J., B.A. Bennett & **B.M. Clark** 1995. The vulnerability of fish to capture by commercial beach-seine nets in False Bay, South Africa. *S. Afr. J. mar. Sci.* 15: 25-31.
- Lamberth, S.J., B.A. Bennett & **B.M. Clark** 1995. Seasonality of beach-seine catches in False Bay, South Africa, and implications for management. *S. Afr. J. mar. Sci.* 15: 157-167.
- Lamberth, S.J., B.A. Bennett & **B.M. Clark** 1995. The impact of beach-seine netting on the benthic fauna and flora of False Bay, South Africa. *S. Afr. J. mar. Sci.* 15: 157-167.
- Lamberth, S.J., Bennett, B.A. & **B.M. Clark**. 1995. It's nothing new. *S.A. Comm. Mar.* 2(4): 29.
- Lamberth, S.J. & **B.M. Clark**. 1995. Attempts to resolve the conflict between recreational anglers and beach-seine fishermen in False Bay, South Africa. In: *Proc. 1st Pan African Fisheries Congress, Nairobi, Kenya, July-August 1995. Fish Manage. Ecol.*
- Lamberth SJ, Branch GM & **BM Clark** 2010. Estuarine refugia and fish responses to a large anoxic, hydrogen sulphide, "black tide" event in the adjacent marine environment. *Est. cstl. Shelf Sci.* 86: 203-215

- Lamberth, S.J., W.H.H. Sauer, B.Q. Mann, S.L. Brouwer, **B.M. Clark** & C. Erasmus. 1997. The current status of the South African beach-seine and gill-net fisheries. *S. Afr. J. mar. Sci.* 18: 195-202
- Napier, V.R., Turpie, J.K. & **B.M. Clark**. 2009. Value and management of the subsistence fishery at Knysna Estuary, South Africa. *African Journal of Marine Science* 31(3): 297–310.
- Parker, D., Kerwath, S.E., Næsje, T.F., Arendse, C.J., Keulder-Stenevik, F.J., Hutchings, K. , **Clark, B.M.**, Winker, H, Cowley, P.D. and CG Attwood. 2017. When plenty is not enough: an assessment of the white stumpnose (*Rhabdosargus globiceps*) fishery of Saldanha Bay, South Africa. *African Journal of Marine Science* 2017, 39(2): 153–166.
- Solanofernández, S., Attwood, C.G., Chalmers, R. **Clark, B.M.**, Cowley, P.D., Fairweather, T., Fennessy, S.T., Götz, A., Harrison, T.D., Kerwath, S.E., Lamberth, S.J., Mann, B.Q., Smale M.J. & L. Swart. 2012. Assessment of the effectiveness of South Africa's marine protected areas at representing ichthyofaunal communities. *Environmental Conservation* 39 (03): 259-270

Books/Book Chapters

- Turpie, J., **Clark, B.M.**, Knox, D., Martin, P., Pemberton, C. & C Savy. 2004. Contributions to Information Requirements for the Implementation of Resource Directed Measures for Estuaries. Volume 1. Improving the biodiversity importance rating of South African estuaries. JB Adams (Ed.). Report to the Water Research Commission by the Consortium for Estuarine Research and Management. WRC Report No. 1247/1/04.
- De Villiers CC, Brownlie S, **Clark B.M.**, Day EG, Driver A, Euston-Brown DIW, Helme NA, Holmes PM, Job N, Rebelo AB (2005) Fynbos Forum Ecosystem Guidelines for Environmental Assessment in the Western Cape. Fynbos Forum and Botanical Society of South Africa, Kirstenbosch. ISBN 0-620-35258-2
- Harris, J.M., Branch, G.M., **Clark, B.M.** & S.C. Sibiya. 2007. Redressing Access Inequities and Implementing Formal Management Systems for Marine and Estuarine Subsistence Fisheries in South Africa. In: T.R. McClanahan and J.C. Castilla (eds.) *Fisheries Management: Progress towards Sustainability*. Blackwell Press, pp. 112-138.
- Niang, I., Nyong, A., **Clark, B.M.**, Desanker, P., Din, N., Githeko, A., Jalludin, M., Osman, B. (2007) Vulnerability, Impacts and Adaptation to Climate Change. In: Otter, L., Olago, D.O. and Niang, I. (eds) *Global Change Processes and Impacts in Africa: A Synthesis*. START/East African Educational Publishers, Nairobi, pp. 226-249.

CHERUSCHA SWART

DATE OF BIRTH: 3 November 1988

NATIONALITY: South African

ACADEMIC QUALIFICATIONS

MSc (Cum Laude) Zoology, Stellenbosch University, 2015 – 2017

BSc (Hons) Biodiversity and Ecology, Stellenbosch University, 2013

BSc Biodiversity and Ecology, Stellenbosch University, 2010 – 2012

SCIENTIFIC REGISTRATIONS

EAPASA – Environmental Assessment Practitioner: Number 2021/3298

COUNTRY EXPERIENCE: South Africa

LANGUAGE PROFICIENCY: English (Excellent), Afrikaans (Excellent)

POSTAL ADDRESS: 8 Steenberg House, Silverwood Close, Tokai 7945

PHONE: +27-21-701 3420

E-MAIL: cher@anchorenvironmental.co.za

EMPLOYMENT HISTORY: 2018 – Present — Environmental Consultant and Environmental Assessment Practitioner: Anchor Environmental Consultants

2014 – 2017 — Assistant Research Consultant: Stellenbosch University

2014 – 2015 — Research Intern: National Research Foundation

SUMMARY PROFILE

Cheruscha attained a Master of Science degree (MSc) in Zoology (Cum Laude) and an Honours (BSc Hons) and Bachelor of Science degree (BSc) in Biodiversity and Ecology from the University of Stellenbosch. She is a Registered Environmental Assessment Practitioner with eight years of research and consulting experience in several disciplinary fields, three of which have been spent conducting Basic and Scoping and Environmental Impact Assessments. Her interests include biodiversity and conservation planning, invasion biology, environmental legislation and management and sustainable development. Her training and experience have made her highly competent within a variety of disciplines, including environmental monitoring and impact assessments, terrestrial and marine biodiversity and ecology, invasion biology, conservation biology, plant and animal sciences and marine invertebrate taxonomy and biology. Within Anchor Environmental Consultants, her primary role is that of Environmental Assessment Practitioner, leading consultant on several environmental specialist studies and collaborating consultant on several other projects. Tasks include applications for prospecting, ranching and other operational rights, environmental licenses and environmental authorisations; specialist impact assessments and baseline studies; environmental monitoring of important conservation and disturbed habitats; and monitoring environmental compliance of various operations. Projects include, amongst others, land-based and offshore prospecting operations; offshore mining operations; greenhouse agricultural projects; land- and sea-based aquaculture facilities; and monitoring the health of bays and ports along the West Coast. Cheruscha is the author of three peer reviewed scientific publications and numerous scientific reports, with several other projects and publications in preparation.

PROJECTS UNDERTAKEN

Period	Country	Clients	Project, Tasks
2022/2023	South Africa	Matzikama Kaolin	<p>Scoping & Environmental Impact Assessment and application for prospecting rights: Prospecting of kaolin in the Western Cape</p> <p>Tasks</p> <ul style="list-style-type: none"> • Fulfilling the primary duties of the Environmental Assessment Practitioner; • Applying for prospecting rights and Environmental Authorisation; • Conducting a Scoping and Environmental Impact Assessment; • Compiling Scoping and Environmental Impact Assessment (S&EIA) Report; • Compiling Environmental Management Programme (EMPr); and • Conducting several Public Participation Processes.
2022/2023	South Africa	Xwena Kaolin	<p>Scoping & Environmental Impact Assessment and application for prospecting rights: Prospecting of kaolin and silica in the Western Cape</p> <p>Tasks</p> <ul style="list-style-type: none"> • Fulfilling the primary duties of the Environmental Assessment Practitioner; • Applying for prospecting rights and Environmental Authorisation; • Conducting a Scoping and Environmental Impact Assessment; • Compiling Scoping and Environmental Impact Assessment (S&EIA) Report; • Compiling Environmental Management Programme (EMPr); and • Conducting several Public Participation Processes.
2022/2023	South Africa	I&J Danger Point	<p>Abalone ranging right application & Risk Assessment</p> <p>Tasks:</p> <ul style="list-style-type: none"> • Applying for abalone ranching right; • Public Participation Process; and • Conducting Risk Assessment for application.
2022 (ongoing)	South Africa	Buffeljags Abalone	<p>Environmental Authorisation amended application</p> <p>Tasks:</p> <ul style="list-style-type: none"> • Applying for environmental authorisation amendment.

2021 - present (2022)	South Africa	Drylands	<p>Basic Assessment Process for a proposed agricultural development on a farm along the west coast of South Africa</p> <p>Tasks - ongoing</p> <ul style="list-style-type: none"> • Fulfilling the primary duties of the Environmental Assessment Practitioner; • Applying for Environmental Authorisation; • Conducting a Basic Assessment Process; • Compiling a Basic Assessment Report; • Compiling Environmental Management Programme (EMPr); • Conducting several Public Participation Processes; and • Conducting site visits and selected specialist assessments and compliance statements.
2022/ 2023	South Africa	Drylands	<p>Basic Assessment Process for a proposed agricultural development on a mine in the Northern Cape of South Africa</p> <p>Tasks:</p> <ul style="list-style-type: none"> • Fulfilling the primary duties of the Environmental Assessment Practitioner; • Applying for Environmental Authorisation; • Conducting a Basic Assessment Process; • Compiling a Basic Assessment Report; • Compiling Environmental Management Programme (EMPr); • Conducting several Public Participation Processes; and • Conducting site visits and selected specialist assessments and compliance statements.
2019 – present (2022)	South Africa	Saldanha Bay Water Quality Forum Trust	<p>The State of Saldanha Bay and Langebaan Lagoon: Annual Monitoring Campaign</p> <p>Tasks:</p> <ul style="list-style-type: none"> • Annual monitoring of the bay and surrounding environment. This includes: <ul style="list-style-type: none"> ○ Field research, sample and data collection; ○ Identification of Invertebrate species (taxonomy) collected during sampling; ○ Statistical analyses; ○ Writing of several chapters of the final report; and ○ Report compilation and editing.
2018 – present (2022)	South Africa	De Beers Marine Namibia	<p>De Beers Marine Namibia Environmental Monitoring Programme in the Atlantic 1 Mining License Area: Annual Benthic Sampling Campaign</p> <p>Tasks:</p>

			<ul style="list-style-type: none"> • Annual monitoring of mining activities on the environment. This includes: <ul style="list-style-type: none"> ○ Identification of Invertebrate species (taxonomy) collected during sampling; ○ Identification of epifaunal species by means of benthic imagery analysis collected with SkiMonkey; ○ Statistical analyses of data using Statistica and Primer; and ○ Writing of several chapters of the final report.
2021/2022	South Africa	SANEK Liquidators	<p>Stonehurst mountain Estate Phase 4 Development – Environmental Site Officer (ESO)</p> <p>Tasks:</p> <ul style="list-style-type: none"> • Monitoring work to ensure compliance with the EMP; • Liaising with stakeholders and contractors on environmental related matters; • Providing environmental awareness training to the Contractors; • Finding environmentally acceptable solutions to construction problems and updating the EMP accordingly; and • Reviewing ESO reports.
2021/2022	South Africa	Trans Atlantic Diamonds	<p>Basic Assessment Process and application for prospecting rights in an offshore sea concession 9B in the Northern Cape (application pending)</p> <p>Tasks</p> <ul style="list-style-type: none"> • Fulfilling the primary duties of the Environmental Assessment Practitioner; and • Applying for prospecting rights and Environmental Authorisation.
2021/2022	South Africa	Trans Atlantic Diamonds	<p>Basic Assessment Process and application for prospecting rights in an offshore sea concession 10B in the Northern Cape (application pending)</p> <p>Tasks</p> <ul style="list-style-type: none"> • Fulfilling the primary duties of the Environmental Assessment Practitioner; and • Applying for prospecting rights and Environmental Authorisation.
2021/2022	South Africa	Trans Atlantic Diamonds	<p>Basic Assessment Process and application for prospecting rights in an offshore sea concession 7C in the Northern Cape (application pending)</p> <p>Tasks</p> <ul style="list-style-type: none"> • Fulfilling the primary duties of the Environmental Assessment Practitioner; and • Applying for prospecting rights and Environmental Authorisation.

2021/2022	South Africa	Trans Atlantic Diamonds	<p>Application for prospecting rights in the sea concession area 12B, Western Cape (application pending)</p> <p>Tasks</p> <ul style="list-style-type: none"> • Fulfilling the primary duties of the Environmental Assessment Practitioner; • Applying for prospecting rights and Environmental Authorisation; • Conducting a Basic Assessment Process; and • Compiling a Basic Assessment Report.
2021/2022	South Africa	Trans Atlantic Diamonds	<p>Basic Assessment Process and application for prospecting rights in the offshore sea concession area 14C, Western Cape</p> <p>Tasks</p> <ul style="list-style-type: none"> • Fulfilling the primary duties of the Environmental Assessment Practitioner; • Applying for prospecting rights and Environmental Authorisation; • Conducting a Basic Assessment Process; • Compiling a Basic Assessment Report; • Compiling Environmental Management Programme (EMPr); and • Conducting several Public Participation Processes.
2021/2022	South Africa	Trans Atlantic Diamonds	<p>Basic Assessment Process and application for prospecting rights in the offshore sea concession area 11C, Western Cape</p> <p>Tasks</p> <ul style="list-style-type: none"> • Fulfilling the primary duties of the Environmental Assessment Practitioner; • Applying for prospecting rights and Environmental Authorisation; • Conducting a Basic Assessment Process; • Compiling a Basic Assessment Report; • Compiling Environmental Management Programme (EMPr); and • Conducting several Public Participation Processes.
2021	South Africa	Trans Atlantic Diamonds	<p>Basic Assessment Process and application for prospecting rights in the inshore sea concession area 14A, Western Cape</p> <p>Tasks:</p> <ul style="list-style-type: none"> • Fulfilling the primary duties of the Environmental Assessment Practitioner; • Applying for prospecting rights and Environmental Authorisation; • Conducting a Basic Assessment Process;

			<ul style="list-style-type: none"> • Compiling a Basic Assessment Report; • Compiling Environmental Management Programme (EMPr); and • Conducting several Public Participation Processes.
2021/2022	South Africa	SRK Consulting	<p>Marine Impact Assessment for the increase in manganese handling capacity at the Multi-Purpose Terminal, Port of Saldanha, Saldanha Bay, South Africa</p> <p>Tasks:</p> <ul style="list-style-type: none"> • Literature review and research; • Baseline survey of the environment; • Marine Specialist Impact Assessment; and • Final Marine Specialist Impact Assessment Report.
2021	South Africa	Nomalungelo Faku	<p>Feasibility study for a pearl farm in the greater Nelson Mandela metropolitan area</p> <p>Tasks:</p> <ul style="list-style-type: none"> • Literature review and research: <ul style="list-style-type: none"> ○ Biological and environmental requirements of candidate oyster species for pearl culturing in Algoa Bay, South Africa; ○ Environmental suitability of the receiving environment; ○ Legislative requirements of the pearl farming industry, • International and local market assessment and financial assessment of pearls and pearl culturing; • Development of a basic economic model; and • Compilation of report to support decision making and business plan development.
2021	South Africa	Cliff Path Action Group	<p>Marine Environmental Impact Assessment for the Proposed Pedestrian Path to Connect the two Parts of the Hermanus Cliff Path via Poole's Bay</p> <p>Tasks:</p> <ul style="list-style-type: none"> • Literature review and research; • Baseline survey of the environment; • Marine Specialist Impact Assessment; and • Final Marine Specialist Impact Assessment Report.
2018 – 2021	South Africa	Mhlathuze Water	<p>Mhlathuze Water Environmental Monitoring Programme for the Richards Bay Offshore Outfalls Region</p> <p>Tasks:</p> <ul style="list-style-type: none"> • Monitoring of the state of the bay. This included: <ul style="list-style-type: none"> ○ Identification of Invertebrate species (taxonomy) collected during sampling; ○ Statistical analyses; and

			<ul style="list-style-type: none"> ○ Conducting sea urchin toxicity testing.
2020	South Africa	Planet Capital and Cape Nordic Corporation	<p>Proposed Land-based Aquaculture Facility near Elands Bay – Bat Specialist Impact Survey and Assessment</p> <p>Tasks:</p> <ul style="list-style-type: none"> • Literature review and research; • Bat Specialist survey, acoustic monitoring and Impact Assessment; • Data analysis; and • Final Bat Specialist Impact Assessment Report.
2020	South Africa	CSIR Coastal Systems Research Group	<p>CSIR Coastal Systems Research Group</p> <p>Tasks:</p> <ul style="list-style-type: none"> • Identification of benthic invertebrate macrofauna.
2020	South Africa	Department of Environmental Affairs and Development Planning	<p>Berg Estuary Valuation Study: Value of The Berg Estuary and Importance of Management Interventions</p> <p>Tasks:</p> <ul style="list-style-type: none"> • Coordinating informal meetings; and • Engaging and consulting with members of the local community.
2019/2020	South Africa	Planet Capital and Cape Nordic Corporation	<p>Basic Assessment Process for the Proposed Land-based Aquaculture Facility near Elands Bay on the West Coast of South Africa</p> <p>Tasks:</p> <ul style="list-style-type: none"> • Assisting with the Basic Assessment Process under the supervision of the EAP; • Conducting site visits; • Assisting with compilation of the Basic Assessment Report and Environmental Management Programme; and • Managing stakeholder database, engagement and public participation process.
2019	South Africa	Department of Agriculture, Forestry & Fisheries	<p>Basic Assessment Process for the Proposed Sea-Based Aquaculture Development Zone in Algoa Bay, Eastern Cape</p> <p>Tasks:</p> <ul style="list-style-type: none"> • Assisting with the Basic Assessment process under the supervision of the EAP; • Assisting with compilation of the Basic Assessment Report and Environmental Management Programme; and • Managing stakeholder database, engagement and public participation process.

2019	South Africa	Doring Bay Abalone	Draft Environmental & Risk Assessment for an Application for a Right to Engage in an Abalone Ranching Pilot Project Tasks: <ul style="list-style-type: none"> Managing stakeholder database, engagement and public participation process.
2019	South Africa	Mozal Alumium Smelter	Estuarine Specialist Report for the Mozal Matola River Pipeline, Mozambique: Estuarine Impact Assessment Tasks: <ul style="list-style-type: none"> Identification of Invertebrate species (taxonomy) collected during sampling; Statistical analyses; and Report writing.

MSc THESIS

SWART C (2017) An assessment of invasive predatory marine crabs and the threat they pose along the South African coastline. MSc Thesis, Stellenbosch University, 154 pp.

PUBLICATION RECORD — ARTICLES

SWART C AND ROBINSON TB (2019) Horizon scanning for alien predatory crabs: insights from South Africa. African Journal of Marine Science 41(2): 125 – 135, DOI: 10.2989/1814232X.2019.1588782

SWART C, VISSER V AND ROBINSON TB (2018) Patterns and traits associated with invasions by predatory marine crabs. NeoBiota 39: 79 – 102. <https://doi.org/10.3897/neobiota.39.22002>

ROBINSON TB AND SWART C (2015) Distribution and impact of the alien anemone *Sagartia ornata* in the West Coast National Park. *Koedoe* 57 (1): DOI: 10.4102/koedoe.v57i1.1246

SEDICK S, CLARK D, GIHWALA K, SWART C (2022) The description of a new species of Nereis (Annelida, Nereididae) from the shallow waters of southern Namibia. In prep.

PUBLICATION RECORD — TECHNICAL REPORTS

SWART C, NDOU J, DALASILE S AND BM CLARK. 2022. Draft Basic Assessment Report for the proposed prospecting in Sea Concession Area 10B by Trans Atlantic Diamonds (Pty) Ltd. Report no. 2039/1 Part A. Prepared by Anchor Environmental (Pty) Ltd for Trans Atlantic Diamonds (Pty) Ltd. In prep.

SWART C, NDOU J, DALASILE S AND BM CLARK. 2022. Draft Basic Assessment Report for the proposed prospecting in Sea Concession Area 10B by Trans Atlantic Diamonds (Pty) Ltd. Report no. 2038/1 Part A. Prepared by Anchor Environmental (Pty) Ltd for Trans Atlantic Diamonds (Pty) Ltd. In prep.

SWART C, DALASILE S, LOUW S, ARMITAGE M.P.A AND BM CLARK. 2022. Draft Scoping Report: Environmental Impact Assessment for Prospecting Rights with Bulk Sampling for kaolin and silica by Xwena Kaolin (Pty) Ltd on Katdoringsvlei and Rooivlei farms, Western Cape. Report no. 2020/2 prepared by Anchor Environmental (Pty) Ltd for Xwena Kaolin (Pty) Ltd. 86 pp

- SWART C, DALASILE S, LOUW S, ARMITAGE M.P.A EN CLARK BM.** 2022. Konsep omvangverslag - Omgewingsimpakbeoordeling vir prospekterregte met grootmaatsteekproefneming vir kaolien en silika deur Xwena Kaolin (Edms) Bpk op Katdoringsvlei en Roovleiplase, Wes-Kaap. Verslag no. 2020/2 voorberei deur Anchor Environmental (Pty) Ltd for Xwena Kaolin (Pty) Ltd. 86 bladsye.
- SWART C, DALASILE S, LOUW S, ARMITAGE M.P.A, AND CLARK BM.** 2022. Draft Scoping Report: Environmental Impact Assessment for Prospecting Rights with Bulk Sampling for Kaolin by Matzikama Kaolin (Pty) Ltd on portions of the Hatebeeste Kom and Goeraap Farms, Western Cape. Report no. 2040/1 prepared by Anchor Environmental (Pty) Ltd for Matzikama Kaolin (Pty) Ltd. 82 pp.
- SWART C, DALASILE S, LOUW S, ARMITAGE M.P.A EN CLARK BM.** 2022. Konsep omvangverslag - Omgewingsimpakbeoordeling vir prospekterregte met grootmaat-steekproefneming (bulk sampling) vir kaolien deur Matzikama Kaolin (Edms) Bpk op Hartebeeste Kom en Goeraapplase, Wes-Kaap. Verslag no. 2040/1 voorberei deur Anchor Environmental (Pty) Ltd for Matzikama Kaolin (Pty) Ltd. 86 bladsye.
- SWART C, DALASILE S, SEDICK S AND CLARK BM .**2022. Basic Assessment Report for proposed prospecting in Sea Concession Area 12B by Trans Atlantic Diamonds (Pty) Ltd. Report no. 1962 prepared by Anchor Environmental Consultants (Pty) Ltd for Trans Atlantic Diamonds (Pty) Ltd. In prep.
- SWART C, DALASILE S, SEDICK S AND CLARK BM.** 2022. Basic Assessment Process for the proposed prospecting in Sea Concession Area 12B by Trans Atlantic Diamonds (Pty) Ltd. Part B: Environmental Management Programme. Report no. 1962/B prepared by Anchor Environmental (Pty) Ltd for Trans Atlantic Diamonds (Pty) Ltd. In prep.
- SWART C, HUTCHINGS K, SEDICK S, DALASILE S, WRIGHT A AND CLARK BM.** 2022. Draft Basic Assessment Report for the proposed prospecting in Sea Concession Area 14C by Trans Atlantic Diamonds (Pty) Ltd. Part B: Environmental Management Programme. Report no. 2006/1. Part B. Prepared by Anchor Environmental (Pty) Ltd for Trans Atlantic Diamonds (Pty) Ltd. 63 pp.
- SWART C, HUTCHINGS K, SEDICK S, DALASILE S, WRIGHT A AND CLARK BM.** 2022. Draft Basic Assessment Report for the proposed prospecting in Sea Concession Area 14C by Trans Atlantic Diamonds (Pty) Ltd. Report no. 2006/1 Part A. Prepared by Anchor Environmental (Pty) Ltd for Trans Atlantic Diamonds (Pty) Ltd. 228 pp.
- HUTCHINGS K, **SWART C, SEDICK S AND CLARK BM.** 2022. Final Basic Assessment Report for the proposed prospecting in Sea Concession Area 11C by Trans Atlantic Diamonds (Pty) Ltd. Report no. 1987 prepared by Anchor Environmental (Pty) Ltd for Trans Atlantic Diamonds (Pty) Ltd.
- HUTCHINGS K, **SWART C, SEDICK S AND CLARK BM .**2022. Final Basic Assessment Report for the proposed prospecting in Sea Concession Area 11C by Trans Atlantic Diamonds (Pty) Ltd. Part B: Environmental Management Programme. Report no. 1987/B prepared by Anchor Environmental (Pty) Ltd for Trans Atlantic Diamonds (Pty) Ltd. 60 pp.
- HUTCHINGS K, **SWART C, SEDICK S AND CLARK BM .**2021. Final Basic Assessment Report for proposed prospecting in Sea Concession Area 14A by Trans Atlantic Diamonds (Pty) Ltd. Report no. 1987 prepared by Anchor Environmental Consultants (Pty) Ltd for Trans Atlantic Diamonds (Pty) Ltd. 146 pp.
- SWART C, SEDICK S, HUTCHINGS K AND CLARK BM.** 2021. Basic Assessment Process for the proposed prospecting in Sea Concession Area 14A by Trans Atlantic Diamonds (Pty) Ltd. Part B:

- Environmental Management Programme. Report no. 1987/B prepared by Anchor Environmental (Pty) Ltd for Trans Atlantic Diamonds (Pty) Ltd. 77 pp.
- CLARK BM, HUTCHINGS K, BICCARD A, TURPIE J, DAWSON J, GIHWALA K, **SWART C**, SEDICK S, WRIGHT A, SCHMIDT K, WEISS J, MAKHOSONKE A, MOSTERT B, BROWN E, LAIRD M, CONRAD J, PARKER A, HOLLOWAY M AND BLECHER I. 2021. The State of Saldanha Bay and Langebaan Lagoon 2021, Technical Report. Report No. AEC 1936/1 prepared by Anchor Environmental Consultants (Pty) Ltd for the Saldanha Bay Water Quality Forum Trust, October 2021.
- SWART C**, CLARK BM & S SEDICK. 2022. Marine Environmental Impact Assessment for the Proposed Pedestrian Path to Connect the Two Parts of the Hermanus Cliff Path Via Poole's Bay, South Africa. Report prepared by Anchor Environmental Consultants (Pty) Ltd for Ecosense Environmental Consultants (Pty) Ltd. 55 pp.
- SWART C**, GIHWALA K, HUTCHINGS K AND BM CLARK. 2022. Marine Baseline Survey for the Increase in Manganese Handling Capacity at the Multi-Purpose Terminal, Port of Saldanha, Saldanha Bay, South Africa. Report prepared by Anchor Environmental Consultants (Pty) Ltd for SRK Consulting. 45pp.
- SWART C**, GIHWALA K, HUTCHINGS K AND BM CLARK. 2022. Marine Impact Assessment for the Increase in Manganese Handling Capacity at the Multi-Purpose Terminal, Port of Saldanha, Saldanha Bay, South Africa. Report prepared by Anchor Environmental Consultants (Pty) Ltd for SRK Consulting. 71pp.
- SWART C**, HUTCHINGS K AND S LOUW. 2021. Feasibility Study for Pearl Culturing in Algoa Bay South Africa. Report prepared by Anchor Environmental Consultants (Pty) Ltd 64pp.
- BICCARD, A., K. GIHWALA, B.M. CLARK, S. SEDICK, **C. SWART**, E.A. BROWN, B.P. MOSTERT, J. DAWSON, S MTSOKOBA, A. MAKHOSONKE AND K. SCHMIDT. 2021. De Beers Marine Namibia Benthic Environmental Monitoring Programme: Atlantic 1 Mining Licence Area 2019 Sampling Campaign. Report prepared for De Beers Marine Namibia by Anchor Environmental Consultants (Pty) Ltd. Report no. AEC 1840/2.
- CLARK BM, HUTCHINGS K, BICCARD A, BROWN E, DAWSON J, LAIRD M, GIHWALA K, **SWART C**, MAKHOSONKE A, SEDICK S, TURPIE J. AND MOSTERT B. 2020. The State of Saldanha Bay and Langebaan Lagoon 2020, Technical Report. Report No. AEC 1876/1 prepared by Anchor Environmental Consultants (Pty) Ltd for the Saldanha Bay Water Quality Forum Trust, October 2020.
- SWART C**, DAWSON J, MALULEKE T, WEISS J AND B CLARK. 2020. Bat Specialist Report and Impact Assessment for a Proposed Land-Based Aquaculture Facility and Small Wind Energy Facility Near Elands Bay, Western Cape. May 2020.
- BICCARD A, GIHWALA K, CLARK BM, SEDICK S, BROWN EA, MOSTERT BP, **SWART C**, MTSOKOBA S, TSHINGANA B, MAKHOSONKE A AND DAWSON J. 2020. De Beers Marine Namibia Environmental Monitoring Programme: Atlantic 1 Mining Licence Area 2018 Benthic Sampling Campaign. Report prepared for De Beers Marine Namibia by Anchor Environmental Consultants (Pty) Ltd. Report no. AEC 1807
- BICCARD A, GIHWALA K, CLARK BM, BROWN EA, MOSTERT BP, MAKHOSONKE A, **SWART C**, SEDICK S, TSHINGANA B AND DAWSON J. 2019. De Beers Marine Namibia Environmental Monitoring Programme: Atlantic 1 Mining Licence Area 2017 Benthic Sampling Campaign. Report prepared for De Beers Marine Namibia by Anchor Environmental Consultants (Pty) Ltd. Report no. 1775/1

- SWART C, MASSIE V AND HUTCHINGS K.** 2019. Proposed Abalone Ranching Pilot Project in Doringbaai, Western Cape. Supporting Document for the Ranching Right Application: Stakeholder Consultation Report. September 2019
- WRIGHT AG, SCHMIDT K, MOSTERT BP, CLARK BM AND **SWART C.** 2018. Estuarine Specialist Report for the Mozal Matola River Pipeline, Mozambique: Estuarine Impact Assessment. Specialist Report no. 1824/2 prepared by Anchor Environmental Consultants (Pty) Ltd for JG Afrika. 33pp
- CLARK BM, MASSIE V, HUTCHINGS K, BICCARD A, BROWN E, LAIRD M, GIHWALA K, **SWART C,** MAKHOSONKE A, SEDICK S, TURPIE J AND VERMAAK N. 2019. The State of Saldanha Bay and Langebaan Lagoon 2019, Technical Report. Report prepared by Anchor Environmental Consultants (Pty) Ltd for the Saldanha Bay Water Quality Forum Trust, September 2019. Report No. AEC 1841/1
- CLARK B, WRIGHT AG, HUTCHINGS K, MASSIE V, MOSTERT B, DAWSON J, CATHCART N, TSHINGANA B, LAIRD M, BROWN E, **SWART C,** BICCARD A. 2019. Mhlathuze Water Environmental Monitoring Programme for the Richards Bay Offshore Outfalls Region 2018/2019 Survey, Technical Report. Report prepared by Anchor Research and Monitoring (Pty) Ltd for Mhlathuze Water, March 2019. Report No. 1800/1. 214pp (+38pp appendices)
- GIHWALA K, BICCARD A, CLARK BM, BROWN EA, MAKHOSONKE A, **SWART C** AND TSHINGANA B. 2019. Mining-related impacts to soft bottom benthic habitats and associated macrofauna assemblages in mining license area SASA 2C and subsequent recovery. Report prepared for De Beers Group of Companies by Anchor Environmental Consultants (Pty) Ltd. Report no. 1800/1

CONFERENCES

- 2014** Poster Presentation: “Distribution and impact of the alien anemone *Sagartia ornata* in the West Coast National Park”. South African Marine Science Symposium, Stellenbosch University, Stellenbosch, 15 – 18 July 2014
- 2015** Poster Presentation: National Research Foundation Research Day, Feb 2014; Second Prize
- 2017** Oral Presentation: “Horizon scanning for intertidal predatory crab invaders: South Africa as a case study”. South African Marine Science Symposium, Nelson Mandela University, Port Elizabeth, 4 – 7 July 2017

WORKSHOPS

- 2014** Basic Project Management course, HUDISA Business School
- 2020** Environmental Impact Assessment Law Event Workshop, Live Online Training, Cape Town. In association with Janice Tooley Attorney and Accredited with SACNASP and ECSA
- 2021** ISO 14001:2015 Environmental Management System training course
- 2022** Western Indian Ocean Regional Benthic Imagery Workshop

SISANDA DALASILE

DATE OF BIRTH: 28 July 1992

NATIONALITY: South African

ACADEMIC QUALIFICATIONS

Masters Candidate in Environmental Health, Department of Environmental and Occupational Studies, Cape Peninsula University of Technology, 2021.

B-TECH Environmental Management, Department of Environmental and Occupational Studies, Cape Peninsula University of Technology, 2019.

Diploma in Environmental Management, Department of Environmental and Occupational Studies, Cape Peninsula University of Technology, 2015

OTHER TRAINING:

Introduction to SAMTRAC and main SAMTRAC (short course), 2018, NOSA college.

COUNTRY EXPERIENCE: South Africa

LANGUAGE PROFICIENCY: English (Excellent), Isizulu and IsiXhosa (Excellent)

POSTAL ADDRESS: 8 Steenberg House, Silverwood Close, Tokai 7945

PHONE: +27-21-701 3420

E-MAIL: sisanda@anchorenvironmental.co.za

EMPLOYMENT HISTORY: 2022-Present: – Junior Consultant: Marine Ecosystems & Resources (Anchor Environmental Consultants)
2020-2021- Junior Safety Officer (Keller Geotechnics)
2017-2017-Intern (Anchor Environmental Consultants)
2015-2018- Process operator (National Department of Public Works)

SUMMARY PROFILE

Sisanda obtained a Baccalaureus Technologiae Degrees (Btech) and National Diploma in Environmental Management from the Cape Peninsula University of Technology and is currently finalising her Masters in Environmental Health. Her training and experience have made her highly competent within a variety of disciplines, including environmental monitoring and impact assessments, Water Use License Application for BP Fuel Station, and Collection water quality samples for laboratory analysis. In her previous work experience included environmental compliance, EMPr design and implementation, and environmental incident reporting. Within Anchor, she is a junior consultant, responsible for compiling stakeholder list of interested and affected parties, drafting of scoping report, Identification of potential environmental impacts. In addition, she has been involved in the drafting of several EMPr's for various projects on the West Coasts of South Africa and has been involved in previous environmental monitoring work in Saldanha Bay.

PROJECTS UNDERTAKEN

Period	Country	Clients	Project, Tasks
Anchor Environmental Consultants			
2021/2022	South Africa	Trans Atlantic Diamonds	<p>Basic Assessment Process and application for prospecting rights in an offshore sea concession 10B in the Northern Cape (application pending)</p> <p>Tasks</p> <ul style="list-style-type: none"> • Conducting an Environmental Impact Assessment; • Compiling an Environmental Impact Assessment (S&EIA) Report; and • Compiling stakeholder lists for Public Participation Processes. • Identification of potential environmental impacts and applicable listed activities (Environmental Impact Assessment regulations,2017)
2021/2022	South Africa	Trans Atlantic Diamonds	<p>Basic Assessment Process and application for prospecting rights in an offshore sea concession 7C in the Northern Cape (application pending)</p> <p>Tasks</p> <ul style="list-style-type: none"> • Conducting an Environmental Impact Assessment; • Compiling stakeholder list of interested and affected parties, • Compiling an Environmental Impact Assessment (S&EIA) Report; and • Identification of potential environmental impacts and applicable listed activities (Environmental Impact Assessment regulations,2017)
2022/2023	South Africa	Matzikama Kaolin	<p>Scoping & Environmental Impact Assessment and application for prospecting rights: Prospecting of kaolin in the Western Cape</p> <p>Tasks</p> <ul style="list-style-type: none"> • Conducting an Environmental Impact Assessment; • Compiling an Environmental Impact Assessment (S&EIA) Report; and • Compiling stakeholder lists for Public Participation Processes.
2022/2023	South Africa	Xwena Kaolin	<p>Scoping & Environmental Impact Assessment and application for prospecting rights: Prospecting of kaolin and silica in the Western Cape</p> <p>Tasks</p> <ul style="list-style-type: none"> • Conducting an Environmental Impact Assessment;

			<ul style="list-style-type: none"> • Compiling an Environmental Impact Assessment (S&EIA) Report; and • Compiling stakeholder lists for Public Participation Processes.
2022-2024	South Africa	Marine Living Resources Fund, Department of Environment, Forestry and Fisheries	<p>Saldanha Bay sea-based Aquaculture Development Zone.</p> <p>Task</p> <ul style="list-style-type: none"> • Write agenda and meeting minutes. • Draft record of proceedings and distribute for comment. • Monitor non-Compliance of farmers. • Request Farm Monitoring Reports, visual logs and supporting documentation from Farmers.

PUBLICATION RECORD — TECHNICAL REPORTS

SWART C, NDOU J, **DALASILE S** AND BM CLARK. 2022. Draft Basic Assessment Report for the proposed prospecting in Sea Concession Area 10B by Trans Atlantic Diamonds (Pty) Ltd. Report no. 2039/1 Part A. Prepared by Anchor Environmental (Pty) Ltd for Trans Atlantic Diamonds (Pty) Ltd. In prep.

SWART C, NDOU J, **DALASILE S** AND BM CLARK. 2022. Draft Basic Assessment Report for the proposed prospecting in Sea Concession Area 7C by Trans Atlantic Diamonds (Pty) Ltd. Report no. 2038/1 Part A. Prepared by Anchor Environmental (Pty) Ltd for Trans Atlantic Diamonds (Pty) Ltd. In prep.

JULIA NDOU

DATE OF BIRTH: 10 August 1991

NATIONALITY: South African

ACADEMIC QUALIFICATIONS

MSc (Zoology) Aquatic Health, University of Johannesburg, 2020

BSc (Hons) Zoology, University of Johannesburg, 2016

BSc Biochemistry and Zoology, University of Johannesburg, 2015

SCIENTIFIC REGISTRATIONS

SACNASP – Ecological and Zoological Sciences (Candidate Natural Scientist): Number 133433

COUNTRY EXPERIENCE: South Africa

LANGUAGE PROFICIENCY: English (Excellent), Tshivenda (Excellent), Sesotho, Isizulu and Xitsonga (Good)

POSTAL ADDRESS: 8 Steenberg House, Silverwood Close, Tokai 7945

PHONE: +27-21-701 3420

E-MAIL: julia@anchorenvironmental.co.za

EMPLOYMENT HISTORY: 2022 – Present — Ecologist and Environmental Consultant: Anchor Environmental Consultants

2021 – 2022 — Assistant Ecologist: Digby Wells Environmental

2019 – 2021 — Aquatics Intern: Digby Wells Environmental

SUMMARY PROFILE

Julia attained a Master of Science degree (MSc) in Aquatic Health (Zoology) and an Honours (BSc Hons) in Zoology and Bachelor of Science degree (BSc) in Biochemistry and Zoology from the University of Johannesburg. She is a Registered South African Scoring System version 5 (SASS5) practitioner with three years of research and consulting experience. Her training and experience have made her highly competent within a variety of disciplines, including environmental monitoring and impact assessments, aquatic, wetland and terrestrial biodiversity and ecology. In her previous work experience included assist mines to become environmental compliant according to government legislations in the fulfilment of Environmental Impact Assessments, Environmental and Social Impact Assessments, Mining Right Applications, Water Use License Applications, Biodiversity Action Plans and Biodiversity Management Plans. In addition, she assessed rivers and wetlands to determine the impact done by industrial/mining operations and/or activities then offer mitigation measures. This includes fieldwork, the compilation of aquatic, wetland and terrestrial proposals, baseline, scoping & impact assessment reports. Within Anchor Environmental Consultants, her primary role is that of an Ecologist and Environmental Consultant. Her tasks include applications for prospecting, ranching and other operational rights, environmental licenses and environmental authorisations; specialist impact assessments and baseline studies; environmental monitoring of important conservation and disturbed habitats; and monitoring environmental compliance of various operations.

PROJECTS UNDERTAKEN

Period	Country	Clients	Project, Tasks
Anchor Environmental Consultants			
2021/2022	South Africa	Trans Atlantic Diamonds	<p>Basic Assessment Process and application for prospecting rights in an offshore sea concession 10B in the Northern Cape (application pending)</p> <p>Tasks</p> <ul style="list-style-type: none"> • Assisting the lead Environmental Assessment Practitioner; • Conducting an Environmental Impact Assessment; • Compiling an Environmental Impact Assessment (S&EIA) Report; and • Compiling stakeholder lists for Public Participation Processes.
2021/2022	South Africa	Trans Atlantic Diamonds	<p>Basic Assessment Process and application for prospecting rights in an offshore sea concession 7C in the Northern Cape (application pending)</p> <p>Tasks</p> <ul style="list-style-type: none"> • Assisting the lead Environmental Assessment Practitioner; • Conducting an Environmental Impact Assessment; • Compiling an Environmental Impact Assessment (S&EIA) Report; and • Compiling stakeholder lists for Public Participation Processes.
2022/2023	South Africa	Matzikama Kaolin	<p>Scoping & Environmental Impact Assessment and application for prospecting rights: Prospecting of kaolin in the Western Cape</p> <p>Tasks</p> <ul style="list-style-type: none"> • Assisting the lead Environmental Assessment Practitioner; • Conducting an Environmental Impact Assessment; • Compiling an Environmental Impact Assessment (S&EIA) Report; and • Compiling stakeholder lists for Public Participation Processes.
2022/2023	South Africa	Xwena Kaolin	<p>Scoping & Environmental Impact Assessment and application for prospecting rights: Prospecting of kaolin and silica in the Western Cape</p> <p>Tasks</p> <ul style="list-style-type: none"> • Assisting the lead Environmental Assessment

			Practitioner; <ul style="list-style-type: none"> • Conducting an Environmental Impact Assessment; • Compiling an Environmental Impact Assessment (S&EIA) Report; and • Compiling stakeholder lists for Public Participation Processes.
2022/2023	South Africa	I&J Danger Point	Abalone ranging right application & Risk Assessment Tasks: <ul style="list-style-type: none"> • Public Participation Process; and • Conducting Risk Assessment for application.
2022/2023	South Africa	Drylands	Basic Assessment Process for a proposed agricultural development on a mine in the Northern Cape of South Africa Tasks: <ul style="list-style-type: none"> • Assisting the lead Environmental Assessment Practitioner; • Conducting an Environmental Impact Assessment; • Compiling an Environmental Impact Assessment (S&EIA) Report; and • Compiling stakeholder lists for Public Participation Processes.
Digby Wells Environmental Consultants			
Aquatic Projects: <ul style="list-style-type: none"> • New Largo Coal Mine aquatic biomonitoring Mpumalanga Province, South Africa 2019-2020 • Sasol Mooikraal Colliery wastewater and aquatic biomonitoring Gauteng Province, South Africa On-going • Eskom Kilbarchen Colliery aquatic baseline assessment Mpumalanga Province, South Africa 2020 • Dagsoom Twyfelaar Coal Mine aquatic biodiversity and impact assessment Mpumalanga Province, South Africa 2019-2020 • Mafube Coal Mine aquatic biomonitoring Mpumalanga Province, South Africa On-going • Ivanplats Platinum Mining Operation aquatic biomonitoring Mpumalanga Province, South Africa On-going • Sasol ECO Ash Backfilling aquatic biomonitoring Free State Province, South Africa On-going • Blair Atholl DWS Queries Gauteng Province, South Africa 2020 • ERWP Aquatic Biomonitoring Mpumalanga Province, South Africa 2021 • Matla Colliery Aquatic & Wetland Biomonitoring Mpumalanga Province, South Africa On-going • Sibanye Stillwater: Aquatic Biomonitoring Northwest Province, South Africa 2021 			
Fauna and Flora Projects: <ul style="list-style-type: none"> • Matla Colliery Terrestrial Ecology Assessment Mpumalanga Province, South Africa 2021 • Copper Sunset Mining Right Extension: Fauna and Flora Assessment Mpumalanga Province, South Africa 2021 • New Clydesdale Fauna and Flora Assessment Mpumalanga Province, South Africa 2021 • Cora Gold's Sanankoro ESIA: Fauna and Flora Assessment Mali 2021 			

- Oklo Resources: Fauna and Flora Assessment | Mali | 2021

Wetland Projects:

- Anglo American Greenside Colliery wetland and impact assessment | Mpumalanga Province, South Africa | 2020
- Sasol Irenedale wetland assessment | Mpumalanga Province, South Africa | 2019
- Mbuyelo Group's Weltevreden Mine wetland assessment | Mpumalanga Province, South Africa | 2019
- Universal Coal Development 's Eerstelingsfontein Colliery Expansion wetland assessment | Mpumalanga Province, South Africa | 2019-2020

Compliance Auditing:

- Environmental audit for Sasol Retail Filling Stations – Sasol Limited's South African Energy Business | Across South African Provinces | 2019-2020

Project Assistance and Administration:

- Harmony Gold Invoice Recon | 2020
- Digby Wells Environmental BBBEE audit | 2020-2021
- EACOP | 2019-2020

MSc THESIS

Ndou J (2020) Evaluation the effects of selenium on the testes of *Oreochromis mossambicus* adult fish using the following techniques. MSc Thesis, University of Johannesburg, 217 pp.

PUBLICATION RECORD — TECHNICAL REPORTS

SWART C, **NDOU J**, DALASILE S AND BM CLARK. 2022. Draft Basic Assessment Report for the proposed prospecting in Sea Concession Area 10B by Trans Atlantic Diamonds (Pty) Ltd. Report no. 2039/1 Part A. Prepared by Anchor Environmental (Pty) Ltd for Trans Atlantic Diamonds (Pty) Ltd. In prep.

SWART C, **NDOU J**, DALASILE S AND BM CLARK. 2022. Draft Basic Assessment Report for the proposed prospecting in Sea Concession Area 7C by Trans Atlantic Diamonds (Pty) Ltd. Report no. 2038/1 Part A. Prepared by Anchor Environmental (Pty) Ltd for Trans Atlantic Diamonds (Pty) Ltd. In prep.

CONFERENCES

2015 Oral Presentation: "Honours project focused on the morphometric study of the testes of *Oreochromis mossambicus* (Peters, 1852) acutely exposed to different concentrations of selenium." Zoological Sciences Symposium, University of Johannesburg, June 2015

2015 Oral Presentation: "Honours project focused on the morphometric study of the testes of *Oreochromis mossambicus* (Peters, 1852) acutely exposed to different concentrations of selenium." National Research Foundation Research Symposium, University of Johannesburg, November 2015

- 2019** Poster Presentation: "Evaluation the effects of selenium on the testes of *Oreochromis mossambicus* adult fish using the following techniques". Zoological Society of Southern Africa Symposium 39th Conference Programme, Skukuza, Mpumalanga, 8 – 10 July 2019

WORKSHOPS

- 2016** Short course: Analysis & effects of metals in the environment.
- 2020** Environmental Management and GIS Techniques Workshop: Ubuntu Environmental Services
-

MICHAEL PHILIP ANTHONY ARMITAGE

DATE OF BIRTH: 9 September 1996

NATIONALITY: South African

ACADEMIC QUALIFICATIONS

MSc (Distinction) Environmental and Geographical Science, University of Cape Town, 2019-2022

BSc (Hons) (Distinction) Environmental and Geographical Science, University of Cape Town, 2018

BSc Environmental and Geographical Science and Archaeology, University of Cape Town, 2015-2017

COUNTRY EXPERIENCE: South Africa, People's Republic of China

LANGUAGE PROFICIENCY: English (Excellent), Afrikaans (Basic)

POSTAL ADDRESS: 8 Steenberg House, Silverwood Close, Tokai 7945

PHONE: +27-21-701 3420

E-MAIL: michael@anchorenvironmental.co.za

EMPLOYMENT HISTORY: 2022-Present: Environmental Consultant: Marine Ecosystems and Resources (Anchor Environmental Consultants)
2021: Research Assistant (South African National Biodiversity Institute and the Breede-Gouritz Catchment Management Agency)
2015: Mathematics and Physical Science Tutor (Mastermaths)

SUMMARY PROFILE

Michael holds an MSc degree in Environmental and Geographical Science, BSc. Hons degree in Environmental and Geographical Sciences and a BSc in Environmental and Geographical Science and Archaeology from the University of Cape Town. His MSc research involved quantifying the degree of anthropogenic heavy metal contamination within the Knysna Estuary through the analysis of estuarine sediment. As part of this work, he also conducted parallel study of heavy metal contamination of the Yangtze Estuary in the People's Republic of China for comparative analysis. He has a background and interest in the fields of estuarine management, water resource management, and pollution. Of particular importance to him are integrated approaches to environmental, riverine, and estuarine management, with "nature-based" solutions such as Sustainable Drainage Systems (SuDS), being preferred to hard design options. Prior to working at Anchor, he analysed water quality data from the Breede River on behalf the Breede-Gouritz Catchment Management Agency and the South African National Biodiversity Agency (SANBI). Within Anchor Environmental Consultants, his primary responsibilities include estuarine specialist studies, management plans, and work on environmental impact assessments (EIA's) in marine, coastal, estuarine, and terrestrial environments.

PROJECTS

Period	Country	Clients	Project, Tasks
2022	South Africa	Infinity Environmental	Estuarine Specialist Upgrade to Zandvlei Canal
2022	South Africa	Nemai Consulting	Estuarine Ecologist Ecological Water Requirements (EWR) update and estuarine impact assessment for the Mzimkhulu Estuary, Kwa Zulu Natal.

Period	Country	Clients	Project, Tasks
2022	South Africa	KSEMS Environmental Consulting	Estuarine Specialist Assessment of Impacts of Proposed Upgrade of the N2 Section 25 between the Isipingo Interchange and Umlaas Canal, and Construction of a New Drainage Canal, in the Ethekwini Municipality, Kwazulu-Natal.
2022	South Africa	Matzikama Kaolin	Co-Author Scoping & Environmental Impact Assessment and application for prospecting rights: Prospecting of kaolin in the Western Cape
2022	South Africa	Xwena Kaolin	Co-Author Scoping & Environmental Impact Assessment and application for prospecting rights: Prospecting of kaolin and silica in the Western Cape
2022	South Africa	Trans Atlantic Diamonds	Co Author of Marine & Fisheries and Socio-Economic Considerations specialist reports and contributor to Basic Assessment (BAR) Report Basic Assessment Process and application for prospecting rights in an offshore sea concession 10B in the Northern Cape (application pending)
2022	South Africa	Trans Atlantic Diamonds	Co Author of Marine & Fisheries and Socio-Economic Considerations specialist reports and contributor to Basic Assessment (BAR) Report Basic Assessment Process and application for prospecting rights in an offshore sea concession 7C in the Northern Cape (application pending)
2022	South Africa	Infinity Environmental	Estuarine Specialist Zandvlei Dredge Assessment: Current Ecological Status

THESES

Armitage M.P.A. 2022. An Assessment of the Heavy Metal Concentrations in Surface Sediments from the Knysna Estuary. MSc Thesis, The University of Cape Town, 172 pp.

Armitage M.P.A. 2018. A Current Analysis of the Heavy Metal Load in the Ashmead Channel (Knysna Lagoon) Sediments. BSc (Hons) Thesis, University of Cape Town, 39 pp.

CONFERENCES

2021 Joint Society of South African Geographers-Southern African Association of Geomorphologists Conference (Presentation)

2021 International Association for Impact Assessment South Africa: Re-Thinking IEM (Integrated Environmental Management) in Pursuit of the Sustainable Development Goals (Attendee)

2021 National Research Fund-National Natural Sciences Foundation of China Collaborative Research Closing Symposium with academics from East China Normal University (Presentation)

2019 National Research Fund-National Natural Sciences Foundation of China Collaborative Research Symposium hosted in Shanghai with academics from East China Normal University and the University of Cape Town (Presentation)

2019 Pollution State of the Knysna Estuary Symposium with members of the Knysna Municipality, Town Council, and stakeholders (Presentation)

- 2018** National Research Fund-National Natural Sciences Foundation of China Collaborative Research Symposium hosted in Shanghai with academics from East China Normal University and the University of Cape Town (Presentation)
- 2018** International Urban Biodiversity & Food Security conference, which was held in Cape Town (Volunteer & Attendee)