

FINAL BASIC ASSESSMENT REPORT FOR THE PROPOSED PROSPECTING IN SEA CONCESSION AREA 11C 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

Kenneth Hutchings
Cheruscha Swart
Safiyya Sedick
Barry Clark

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



CURRICULUM VITAE

KENNETH HUTCHINGS

Born:	15 June 1972, South Africa
Nationality:	South African
Languages:	English excellent/Afrikaans good/ Xhosa fair
Present occupation:	Principal Consultant
Work address:	8, Steenberg House, Silverwood Close, Tokai 7945 South Africa
Drivers licence:	Code 08, 30/07/1990
Commercial dive qualifications:	Class III scientific, Supervisor
Commercial skippers ticket:	Category B (< 9m, 40 NM, dive & night operations)
Email:	ken@anchorenvironmental.co.za

SUMMARY PROFILE

Dr Hutchings has more than 25 years of research and consulting experience in the fields of fisheries management, mariculture, estuarine research and management, marine and estuarine spatial planning, marine impact assessment, research and conservation strategy development, fishery socio-economic surveys and analyses, biological sampling and life-history analyses of fish (age and growth, reproduction, mortality, migration, diet, ecology), taxonomic methodology, population genetics, fisheries modelling, marine ecotoxicity trials, trace metal pollution and physico-chemical, ecological and biodiversity surveys of marine, estuarine and freshwater habitats. Dr Hutchings is experienced in developing estuarine and coastal management plans and in conducting public participation processes. Dr Hutchings is a research associate of the University of Cape Town's Marine Research Institute. He has excellent verbal and writing communication skills, is competent with most software packages used in scientific research and consulting projects. He has published 19 scientific papers and compiled more than 100 consulting reports. Dr Hutchings is comfortable working as part of a team in both a leadership and mentoring position or as a team member. Dr Hutchings has participated in international collaborative studies in Angola, Tanzania, Namibia, Sierra Leone, Republic of Congo, Somaliland and Mauritius. He has practical experience in several fishing sectors and has good understanding of most commercial fishing methods (hand, line, spear, pole, gill net, trammel, net, beach seine net, trap, longline, trawl and purse-seine). He has personally collected scientific data for the demersal trawl and longline hake fisheries, designed, implemented and managed fishery observer training programmes for line, longline, lobster trap and demersal trawl fisheries. He has project managed and completed two, three-year contract research projects for the South African

Department of Environmental Affairs and Tourism (Marine and Coastal Management) and numerous consulting projects for state and private sector clients.

TERTIARY EDUCATION:

PhD Zoology – Fish taxonomy, life history, ecology and management, UCT (2005)

M.Sc. Zoology (with distinction) – Fisheries management, UCT (2000)

B.Sc. (Honours - First Class) Marine Biology, UCT (1997)

B.Sc. Zoology & Environmental and Geographical Science, University of Cape Town (1994)

Distinction in Zoology

RELEVANT WORK AND PROJECT EXPERIENCE

- Principal Consultant, Anchor Environmental Consultants (1999-2021)
- PhD student, Line-fish research (under contract to MCM) (2001-2005)
- Research officer, Zoology Department, University of Cape Town (1998-2000)
- Demersal Trawl Fishery, scientific observer, University of Cape Town (1995)
- Commercial squid (freezer vessel), line-fish crew (deck boat), ski boat crew/skipper, Beach-seine fishing crew, boat-skipper, shore skipper, B & K fishing CC. Messrs. G. William, M. Johnson & B. Docke (1986-2006)

MEMBERSHIP OF PROFESSIONAL BODIES/ORGANISATIONS

- Professional Natural Scientist, the South African Council for Natural Scientific Professions (2014-present)
- Research Associate Marine Research Institute, Department of Biological Science, University of Cape Town (2006-present)
- Associate Technical Consultant, Marine Stewardship Council (2019-present)
- Linefish Scientific Working Group (1999-2001)

SELECTED RECENT EXPERIENCE

Period	Country	Client	Project, Tasks
2021	South Africa	WWF-South Africa	Environmental Specialist Benthic Monitoring programme for the Saldanha Bay Aquaculture Development Zone. Principal consultant responsible for project review and oversight.
2020-2021	South Africa	EDTEA KZN	Development of an Estuary Management Plan for the Uthongathi Estuary, KwaZulu-Natal. Project review.
2020-2021	Sierra Leone	Iluka/Sierra Rutile/Digby Wells	Environmental, Safety and Health Impact Assessment (ESHIA) review for mining of the Sembehun group of deposits in the Southern Province of Sierra Leone. Estuarine specialist.
2020	South Africa	Western Cape Government	Value of the Berg Estuary and Importance of Management Interventions. Biodiversity team leader and fisheries expert responsible for research and reporting.
2020-2021	South Africa	City of Cape Town Metropolitan	Effluent Pipelines Biomonitoring Principal consultant responsible for project review and oversight.
2020	South Africa	Department of Environment Forestry and Fisheries (DEFF)	Fishery Independent Abalone Surveys. Principal consultant responsible for project implementation and oversight.
2020	South Africa	Department of Environment Forestry and Fisheries (DEFF)	Environmental Specialist Monitoring of the Saldanha Bay Aquaculture Development Zone. Principal consultant responsible for project review and oversight.
2019	South Africa	Environment for Development Initiative, University of Gothenberg	Completion of Fishery Performance Indicators (see Anderson et al 2015) for South African small pelagic, hake deep-sea trawl, west coast rock lobster and hake longline sectors. Principal consultant who undertook the research, consultation with industry completion of FPI spreadsheets and summary profiles.
2019	South Africa	Doringbaai Abalone	Risk and environmental assessment and public participation process to support a Phase 2 application to undertake abalone ranching. Project leader.
2019-2020	South Africa	South African National Parks	Subtidal surveys of commercially important and indicator invertebrate and fish species within the Table Mountain Marine Protected Area. Project leader.
2019	Mozambique	Golder Mozambique/Sasol Petroleum Mozambique	Marine specialist impact assessment for proposed offshore explorations in shallow water portions of blocks 16 & 19,

Period	Country	Client	Project, Tasks
		Exploration Limitada	Inhambane and Sofala provinces, Mozambique. Project leader responsible for study design, implementation and reporting.
2018-2019	Namibia	Namibian DeBeers	Sandy beach, rocky intertidal and subtidal monitoring programme. Studies on the effects of mining activities and mitigation measures to avoid or minimise impacts on the affected environment. Sandy beach team leader, survey design, implementation, analysis and reporting.
2018-2020	South Africa	Umhlathuze Water	Environmental monitoring of the Richards Bay Pipelines. Project leader, physical oceanography and fish specialist.
2018-2019	South Africa	Department of Agriculture, Forestry and Fisheries	Marine specialist impact assessment study for the declaration of proposed bivalve and finfish aquaculture development zones in Algoa Bay. Principal consultant responsible for marine ecological assessment, review of EIA, public presentation and stakeholder engagement.
2018	South Africa	Diamond Coast Aquaculture	Basic Assessment Process for proposed upgrades to the diamond coast aquaculture facility Kleinsee, northern cape
2018	South Africa	Port Nolloth Sea Farms Ranching (Pty) Ltd	Basic Assessment process for a proposed abalone holding and processing facility.
2018	Somaliland	WSP, DP World	Marine and coastal specialist Environmental, Health and Social Impact Assessment for proposed Berbera Port expansion.
2018	Namibia	Ministry of Mines and Energy	Marine benthic baseline study of intertidal and subtidal habitats in vicinity of new oil and gas terminal. Fish, sandy beach invertebrate and sea bird specialist.
2018	Republic of Congo	The Biodiversity Company, Kola Potash	Oceanographic and benthic surveys and ecotoxicity trials to assess potential impacts of proposed potash processing discharge, jetty construction and transshipment of product. Project leader.
2017	South Africa	Viking Fishing Group	Socio-economic assessment of a 60% reduction in Viking Fishing Group's allocation in the inshore demersal trawl fishery. Fisheries expert responsible for project supervision and review.
2017-2018	Sierra Leone	Sierra Rutile PTY Ltd	Fish and fisheries expert assess downstream impacts of rutile mining operation on downstream estuarine and marine habitats.
2017	South Africa	Southern Cross Salmon	On-site oceanographic monitoring and

Period	Country	Client	Project, Tasks
		Pty Ltd.	environmental impact assessment for proposed salmon sea cage farm, Saldanha Bay
2017	South Africa	National Nuclear Regulator	Marine and fisheries expert review of Thyspunt site safety report submitted by Eskom.
2016-2017	South Africa	Royal Society for the Protection of Birds	Design and conduct a feeding trial experiment to assess the uptake of the rodenticide brodifacoum by Tristan Rock lobsters <i>Jasus paulensis</i> . Principal consultant responsible for all aspects of the study, including permitting, experimental design and setup, data analysis and reporting.
2016-2017	South Africa	Department of Water and Sanitation	Classification of and resource quality objectives for the water resources of the Berg and Breede water management areas. Senior consultant responsible for status quo descriptions of estuaries in the two study areas and fish specialist for ecological reserve determination studies on nine estuaries.
2016	South Africa	WorleyParsons RSA (Pty) Ltd and Oiltanking MOGS (Pty)	Marine Impact Assessment for sea water intake and discharge facility at Saldanha Bay. Senior consultant responsible for report.
2016	South Africa	MOGS (Pty) Ltd	Marine baseline report for import facility for natural gas in Saldanha Bay.
2016	South Africa	Port Owen Marina Authority	ADCP measurement and analysis of current velocity in relation to tidal phase in the Berg River Estuary. Development of a timetable for disposal of dredge spoil that is compliant with conditions stipulated in the environmental authorization. Senior consultant responsible for survey and reporting.
2016-2020	South Africa	DeBeers Marine Namibia	Collaboration on survey design and statistical analysis of data collected as part of a long-term benthic monitoring programme. Scientific review of reporting.
2016	South Africa	SE Solutions (Pty) Ltd and South32 Aluminium SA Limited	Prepare marine and estuarine specialist study for EIA for a desalination plant in Richards Bay to supply Hillside Aluminium with process water. Study leader, field investigation and report compilation.
2016	South Africa	City of Cape Town	Preparation of estuary maintenance plan impact assessment reports for eight estuaries within the megacity boundaries. Study leader undertook site visits, liaised with city staff and compiled reports.

Period	Country	Client	Project, Tasks
2016	South Africa	Atlantic Salmon Pty Ltd.	Deploy and retrieve an acoustic Doppler current profiler to measure currents at a proposed salmon farm site in St Helena Bay. Analyse and present data.
2015-2016	South Africa	Mossel Bay Municipality	Preparation an estuary management plan for the Hartenbos Estuary. Supervisory role in development of plans, presentation and chairing of public meeting.
2014-2016	South Africa	Transnet National Ports Authority	Field survey team leader for the implementation of a water, sediment quality and biological monitoring programme in the Port of Durban. Supervision of analysis and reporting.
2014-2016	South Africa	Coega Development Corporation	Assessment of impacts of wastewater discharge from Coega Industrial Development Zone, Algoa Bay. Conduct oceanographic data analysis, marine and marine baseline study.
2014-2016	South Africa	Nelson Mandela Bay Metro, GIBB	Assessment of impacts of wastewater discharge from a new WWTW at Cape Recife, Algoa Bay. Oceanographic, bathymetry and ecological survey team leader, data analysis and reporting.
2006-2021	Namibia	NamDeb Namibia	Sandy beach macrofauna and sediment quality monitoring programme for the Bogenfels and MA1 Mining Licence Areas, Namibia. Studies reported on the effects of mining activities and mitigation measures to avoid or minimise impacts on the affected environment. Sandy beach team leader, survey design, implementation, analysis and reporting.
2015	South Africa	NWJ Environmental	Impact assessment for a proposed sand mining operation on the Umzumbe Estuary, KwaZulu-Natal. Ecological and physio-chemical estuarine survey design, implementation and reporting.
2015	South Africa	Marutleng SHE Services	Marine Impact Assessment Simonstown-Glencairn Railway Rehabilitation and Maintenance Work. Sandy beach and rocky shore survey design, implementation and reporting.
2015	South Africa	AquaTech	Risk assessment for in-water hull cleaning operations in the Port of Durban, South Africa. Contribution to methodology, supervision of sampling protocol, review of report.
2015	Namibia	Pisces Environmental Services	Gecko Namibia Vision Industrial Park Development. Compilation of baseline field survey ichthyofauna report.

Period	Country	Client	Project, Tasks
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). Project leader responsible for design, data collection by means of interviews with industry and fishery scientists, socio-economic analysis and reporting.
2014	South Africa	Molapong Aquaculture	Risk Assessment for culture of King and Coho salmon in South Africa. Reporting and review.
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. Research and reporting.
2014	South Africa	WWF-SA	Assist with the development of a Fisheries Improvement Project for Small Scale Fisheries in the Kogelberg. Undertaking fisheries assessments using the Marine Stewardship Council benchmarking tool, workshops and reporting.
2014	South Africa	Tronnox Namaqua Sands, Matzikamma Municipality, SRK	Environmental impact assessment for an aquaculture facility at Doringbaai, Northern Cape. Assessment of sites for intake and discharge infrastructure and potential environmental impacts of proposed abalone and finfish aquaculture discharges on the marine environment.
2014	South Africa	Cape Nature	Rezoning and realignment of borders for Betty's Bay, Goukamma and Robberg marine protected areas in South Africa. Fisheries impacts, advice and review.
2014-2017 2019 2020	South Africa	Port Nolloth Sea Farms Ranching (PTY) LTD. Diamond Coast Aquaculture. Diamond Coast Abalone	Baseline survey and monitoring for abalone ranching concession areas NC2, NC3 and NC4. Team leader responsible for sub tidal ecological survey design, implementation and reporting.
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. Responsible for an assessment of marine fishery impacts under past, present and future management scenarios.
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. Project leader responsible for field survey

Period	Country	Client	Project, Tasks
			design and implementation.
2013	South Africa	Department of Agriculture, Forestry & Fisheries (DAFF)	Development of a Strategy for Research in the Fisheries Sector. Principal consultant responsible for consultation, data acquisition and reporting.
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. Field survey leader.
2013	South Africa	Sea Harvest	Assessment of fish factory effluent water quality. Sampling, analysis and reporting.
2013, 2015-2016	South Africa	Department of Agriculture, Forestry & Fisheries (DAFF)	Diving Surveys of the Eastern Cape Abalone Resource. Study leader responsible for planning, implementation and reporting.
2012	South Africa	South African National Parks	Fisheries consultant for a study of the potential impacts of the Addo Elephant National Park Marine Protected Area on commercial fisheries and their value. Tasks included collection of data by means of interviews with fishing industry representatives and government scientists, data analysis and reporting.
2012	Mauritius	Mauritius Oceanography Institute	Diving team leader for alien species, and water and sediment quality assessment of Port Louis, Mauritius.
2012	South Africa	Transnet National Ports Authority	Marine specialist appointed to assess potential impacts of iron ore oxide (Fe ₂ O ₃) on the marine flora and fauna of Saldanha Bay. Analysis of storm water runoff.
2012	South Africa	Amathole Water Board	Marine specialist appointed to assess the suitability of different sites and the impacts of reverse osmosis desalination plant discharge on the marine environment.
2010-2013	South Africa	Department of Agriculture, Forestry & Fisheries (DAFF)	Principal consultant as marine ecology and aquaculture specialist on an EIA for four Marine Aquaculture Development Zones (MADZs) in the Eastern Cape, South Africa. Project tasks included reviewing available technology and its suitability for use at each of the selected sites, identifying key risks and impacts that could arise from the culture of selected species on the sites including impacts on existing beneficial uses, and developing an Environmental Management and Monitoring Plan for each site as a whole as well as individual concession areas within each site.
2011	South Africa	Department of Agriculture, Forestry & Fisheries (DAFF)	Principal consultant on a Strategic Environmental Assessment (SEA) to identify potential sea-based finfish

Period	Country	Client	Project, Tasks
			aquaculture development zones (ADZ) off the South African coastline. The study entailed identifying and applying a suite of quantitative site selection criteria in a geographical information system (GIS) framework to identify suitable sites for sea based finfish culture in South Africa, taking account of environmental suitability, environmental sensitivity, and user conflict considerations.
2011	South Africa	Element Consulting Engineers	Marine specialist baseline report for a reverse osmosis desalination plant at Lamberts Bay. Responsible for sub-tidal ecological survey design, implementation, analysis and reporting.
2011	South Africa	Really Useful Investments no 72 (PTY) LTD	Environmental assessment for the abalone (<i>Haliotis midae</i>) ranching right application (phase 2) in the Northern Cape (area NC2). Desktop research and reporting.
2011	South Africa	Council for Scientific and Industrial Research (CSIR)	Benthic macrofauna and fish baseline survey for a reverse osmosis desalination plant at Saldanha. Survey team leader responsible for design, implementation analysis and reporting.
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. Principal consultant on a study assessing trace metal pollution in the Diep estuary in the City of Cape Town, to investigate potential sources of pollution and to prepare management recommendations for addressing principal sources of pollution.
2010	South Africa	Port Owen Marina Authority	Assessment of Port Owen marina dredging activities on the Berg River estuarine fish and macrobenthos communities. Senior consultant responsible for survey and reporting.
2010	South Africa	Chand Environmental	Marine and coastal specialist appointed to assess 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.
2009-2019	South Africa	Various companies	Consultant on a series of environmental impact assessments for desalination plants at Sedgefield, Plettenberg Bay, Witsands, Saldanha Bay, Mossel Bay and Port Nolloth, and Cape Town. (7 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)	Consultant appointed to develop a management plans for the Olifants, Berg, and Uilkraals Estuaries, South Africa. (Three separate appointments). Projects entailed preparing situation assessments and strategic management plans for the Olifants, Berg and Uilkraals estuaries that included recommendations for establishment of a new marine protected area, terrestrial protected area, zonation plans for each of these elements, visitor management plans, and recommendations for institutional development. Consultant appointed for the implementation of the Verloerenvlei estuary management plan. All projects included presentation of plans and consultation with stakeholder leading to the establishment of estuary management forums comprising management agency representatives and local stakeholders.
2009-2011	South Africa	WWF-SA, Lotto Programme	Scientific advisor on a shore-based fisheries monitoring programme coordinating a team of 20 fisheries monitors at six sites on the South and East coasts of South Africa. Tasks included on-going training, quality control and report reviews.
2009-2010	South Africa	WWF-SA/Cape Action for People and the Environment (C.A.P.E.)	Fisheries consultant for the preparation of marine and coastal spatial plans and socio-economic assessments for the Kogelberg Biosphere Reserve and Garden Route Initiative. The project involved mapping biodiversity pattern and processes in the marine and coastal environment, spatial mapping of economic value, good and services, and of threats to these ecosystems.
2009	South Africa	West Coast District Municipality, Jeffares & Green (Pty) Ltd	Principal consultant on an assessment of the Jakkalsvlei estuary, the purpose of which was to describe and assess the ecological impacts of illegal excavation and infilling activities that took place during July 2008, and to draft rehabilitation plan to mitigate any impacts.
2009	South Africa	City of Cape Town	Consultant on project to prepare a situation assessment for the Coastal Monitoring Programme for the City of Cape Town (City of Cape Town). Preparation of an overview report on the conservation status and sensitivity of the City of Cape

Period	Country	Client	Project, Tasks
			Town Coast including estuaries.
2009	South Africa	Doug Jeffery Environmental Consultants	Senior consultant on an assessment of the status and sensitivity of the coastal marine environment off Oudekraal on the Cape Peninsula with an assessment of potential constraints relating to impacts to the marine environment on the development of the site.
2002, 2009, 2015- 2018	South Africa	Department of Environmental Affairs & Tourism: Marine and Coastal Management (DEAT: MCM)	Estimation of west coast rock lobster catch and effort by the recreational fishery sector. Responsible for telephone survey data analysis and reporting. Project included a series of workshops aimed at resolving inconsistencies in previous surveys and developing improved methodology for future surveys.
2009	South Africa	Chand Environmental Consulting	Marine and coastal specialist appointed to assess the status and sensitivity of the coastal marine environment off Oudekraal on the Cape Peninsula, and likely impacts that would arise from development of the site.
2008- 2011	South Africa	Century City Property Owners Association	Principal consultant on a study to assess the effectiveness of a fish eradication programme conducted in the Century City wetlands and canals using the ichthyocide rotenone, and for development of recommendation for future management of the system
2007- 2011	South Africa	Resource Ballast Technology (Pty) Ltd	Consultant appointed as 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. Project entailed verifying the efficacy of the ballast water treatment system as well as literature survey and laboratory toxicity testing to assess the residual acute and chronic toxicity of the treated ballast water to a variety of different organisms and potential risks posed by the treated ballast water to the environment and human health.
2007- 2011	South Africa	Department of Environmental Affairs & Tourism: Marine and Coastal Management (DEAT: MCM)	Scientific advisor of a 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, hake longline, west coast rock Lobster,

Period	Country	Client	Project, Tasks
			Inshore demersal trawl and hake handline fishing in South African waters. Scientific advisor was responsible for recruiting and training a team of fishery observers who were deployed on-board vessels and at strategic landing sites around the country, quality control of all data collected and review of data reports.
2007-2010	Ghana	Tullow Oil Plc	Consultant responsible for preparation of 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).
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)". The estuary component of the project included conducting a health assessment of the Pangani estuary with the Tanzanian national team and the development of a flow assessment tool to guide allocation of freshwater flow in the system.
2006	South Africa	Department of Science and Technology	Investigation of stakeholder requirements and potential host institutions for the South African National Antarctic Programme (SANAP).
2005-2007	Angola	BCLME Programme/ United Nation Development Programme (UNDP)/ UNOPS/Global Environment Facility (GEF)	Consultant on a project aimed at assessing the status of biodiversity along the Angola coastline. The project entailed completing a series of field surveys at selected localities at approximately 100 km spacing along the Angolan coastline at which inshore fish, rock intertidal and sandy beach biota were surveyed. Data were analysed with a view to identifying biogeographic patterns in Angolan coastal fauna and flora.
2005-2007	South Africa	Cape Action Plan for People & the Environment (C.A.P.E.), Cape Nature, and Department of Environmental Affairs	Consultant on a biodiversity and economic assessment and development of an integrated conservation plan for CAPE estuaries. The project comprised filling estuary biodiversity data gaps (collection and collation of new botanical, fish and

Period	Country	Client	Project, Tasks
		& Tourism: Marine and Coastal Management (DEAT: MCM)	bird data for temperate South African estuaries).
2007, 2005	South Africa	Transnet-National Ports Authority (Transnet NPA)	Consultant on ballast water, flora and fauna survey in the Ports of Durban and Port Elizabeth. Surveys were conducted in representative examples of all habitat types present in the Port of Durban and Port Elizabeth to identify all species present in the port, including all alien and potentially cryptogenic species. Responsible for sampling and reporting.
2005	South Africa	National Empowerment Fund (NEF)	Principal consultant on a due diligence (feasibility) study to assess the feasibility of a proposed eel aquaculture and processing operation in the Eastern cape, South Africa, focussing on biological, ecological, logistic and legislative considerations of the proposed project.
2001-2005	South Africa	Department of Environmental Affairs & Tourism: Marine and Coastal Management (DEAT: MCM)	Project leader on a research programme that investigated the taxonomy, biology and management of South African Sciaenid fish of the genus <i>Umbrina</i> . Responsible for project design, sampling strategy, biological sampling and processing of samples to provide data on taxonomy, age and growth, reproduction and population genetics. Analysis and use of these data in stock assessments and management recommendations.
2005	South Africa	Emross Consulting CC.	Marine specialist for the assessment of the potential impacts of a boat launching site on the marine environment at Mbotyi River Mouth.
2004-2021	South Africa	Saldanha Bay Water Quality Forum Trust (SBWQMFT)	Senior consultant on a team appointed to develop a series of "State of the Bay" Monitoring Programme and Reports for Saldanha Bay and Langebaan Lagoon in 2004, and annually between 2008 and 2015. The project involved collation and analysis of historic data from a wide range of disciplines, identification of key indicators for the reporting system, as well as initiating new data collection and survey programmes, and the production of annual monitoring reports and yearly State of the Bay Reports.
2003-2005	South Africa	Department of Water Affairs & Forestry (DWAF)	Estuarine and fisheries consultant on the Berg River Baseline Monitoring Programme. The objective of the baseline

Period	Country	Client	Project, Tasks
			monitoring programme was to describe the natural and present state, including the natural variability, of those chemical, physical and biological characteristics of the river and its hydraulically linked systems (i.e. estuary, floodplains and groundwater) most likely to be affected by changes imposed after the construction of the Skuifraam Dam. The study spanned a period of three years and required a multidisciplinary approach. Duties included assisting specialists from a wide range of disciplines including water quality, sociology, macroinvertebrates, fish, avifauna, vegetation and algae.
2001-2003	South Africa	Department of Environmental Affairs & Tourism/ Rhodes University	Fisheries specialist contracted to assist with an Economic Sectoral Study of the South African Fishing Industry. The consultant was responsible for collecting requisite data on the linefish, sector.
2001	South Africa	GEF/UNDP/IMO Globalast Programme	Fish scientist on a ballast water surveys in the Port of Saldanha. The objective of the study was to survey representative examples of all habitat types present in the ports with a view to developing a full list of all species including all alien and potential cryptogenic species in the port.
1999-2000	South Africa	Foundation for Research Development	Researcher on a project to assess the impacts of exploitation of wonderworm <i>Marphysa sanguinea</i> on bouldershore habitats on the Cape Peninsula, South Africa. The project included field surveys, literature review, statistical analysis of data and report production.
1998-2000, 2007-2011	South Africa	Department of Environmental Affairs & Tourism: Marine and Coastal Management (DEAT: MCM)	Scientific advisor and operations manager of an offshore, boat-based fisheries monitoring programme designed to supply and deploy scientific observers aboard fishing vessels for the inshore trawl, hake longline and west coast rock lobster fisheries. Responsibilities of the scientific advisor included ensuring that observers were trained to collect accurate data on the nature of fisheries operations, catch composition, by-catch mortality, fish biology, quantity and size range of discarded target species, and biological samples as required. Data were captured electronically and submitted to the client for use in stock assessment and resource

Period	Country	Client	Project, Tasks
			management programme.
1998-2000	South Africa	Department of Environmental Affairs & Tourism: Marine and Coastal Management (DEAT: MCM)	Lead researcher on a 3-year project that assessed the catch, effort and socioeconomic status of the Western Cape gill and beach-seine net fisheries. Responsible for project design and implementation. Included sampling of commercial fish catches, conducting detailed socio-economic interviews with industry participants, experimental netting and interpretation of the findings into management recommendations.



SCIENTIFIC PUBLICATIONS

- ASCHE F, GARLOCK TM, AKPALU W, AMAECHINA EB, BOTTA R, CHUKWUONE NA, EGGERT H, HUTCHINGS K, LOKINA R, TIBESIGWA B & J K TURPIE 2020. Fisheries performance in Africa: An analysis based on data from 14 countries. *Marine Policy*, in press.
- HORTON M, KERWATH S, PARKER D, WINKER H, LAMBERTH S, & K. HUTCHINGS 2019 Age, growth and per-recruit stock-assessment of *Chelon richardsonii* in Saldanha Bay and Langebaan Lagoon, South Africa. *African Journal of Marine Science*, 41: 313-324
- PARKER D, SE KERWATH, TF NÆSJE, CJ ARENDSE, FJ KEULDER-STENEVIK, K HUTCHINGS, BM CLARK, H WINKER, PD COWLEY & 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*, **39**:2, 153-166
- HUTCHINGS, K & C.G ATTWOOD 2013 Belman (*Umbrina robinsoni*) In: Mann BQ. (Ed). Southern African Marine Linefish Species Profiles. Special publication, Oceanographic Research Institute, Durban 9:165-166.
- HUTCHINGS, K. and M. H. GRIFFITHS 2010 - Life-history strategies of *Umbrina robinsoni* (Sciaenidae) in warm-temperate and sub-tropical South African marine reserves *African Journal of Marine Science* **32**(1):37-53
- HUTCHINGS, K. and M. H. GRIFFITHS 2010 – Assessment of South African *Umbrina robinsoni* based on per-recruit models *African Journal of Marine Science* **32**(3): 511–523
- HUTCHINGS, K. GRIFFITHS M. H. and S.J LAMBERTH 2010 - An investigation of the effect of temporal variation in growth rate of *Umbrina robinsoni* on biological reference point estimates calculated using per-recruit models. *African Journal of Marine Science* 32(3): 633–636
- CLARK, B.M., HUTCHINGS, K., and S.J. LAMBERTH 2009. Long-term variations in the composition and abundance of fish in the Berg estuary, South Africa. *Transactions of the Royal Society of south Africa* **64**(2): 238-258
- LAMBERTH, S.J., VAN NIEKERK, L and K HUTCHINGS 2008 Comparison of, and the effects of altered freshwater inflow on, fish assemblages of two contrasting South African estuaries: the cool-temperate Olifants and the warm-temperate Breede. *African Journal of Marine Science* **30**(2): 311–336.
- HUTCHINGS, K., CLARK, B.M., ATKINSON, L.J. and C. G. ATTWOOD 2008 - Evidence of recovery of the linefishery in the Berg River Estuary (Western Cape, South Africa) subsequent to closure of commercial gill netting. *African Journal of Marine Science*. **30**(3): 507–517.

- HUTCHINGS, K., GRIFFITHS, M. H. and J. G. FIELD 2006 – Regional variation in the life history of the canary drum *Umbrina canariensis* (Sciaenidae), in South African waters. *Fisheries Research* **77**:312-325.
- GRIFFITHS, C. L., VAN SITTERT, L., BEST, P. B., BROWN, A. C., CLARK, B. M., COOK, P. A., CRAWFORD, R. J. M., DAVID, J. H. M., DAVIES, B. R., GRIFFITHS, M. H., HUTCHINGS, K., JERARDINO, A., KRUGER, N., LAMBERTH, S., LESLIE, R. W., MELVILLE-SMITH, R., TARR, R. and C. D. VAN DER LINGEN 2004 – Impacts of human activities on marine animal life in the Benguela: A historical overview. *Oceanogr. Mar. Biol. Ann. Rev.* **42**: 303-392.
- HUTCHINGS, K. and M. H. GRIFFITHS 2005 - Identity and distribution of southern African sciaenid fish species of the genus *Umbrina*. *African Journal of Marine Science* **27**(1): 1-22.
- HUTCHINGS, K. and S. J. LAMBERTH 2003 - The likely impacts of an eastward expansion of the gill-net fishery in the Western Cape, South Africa; Implications for Management. *Maine and Freshwater Research* **54**: 39-56.
- HUTCHINGS, K. and S. J. LAMBERTH 2002 – Catch and effort estimates for the gill and beach-seine net fisheries in the Western Cape, South Africa. *S. Afr. J. mar. Sci.* **24**: 205-225
- HUTCHINGS, K. and S. J. LAMBERTH 2002 - By-catch in the gill and beach-seine net fisheries in the Western Cape, South Africa, with implications for management. *S. Afr. J. mar. Sci.* **24**: 227-241
- HUTCHINGS, K., LAMBERTH, S. J. and J. K. TURPIE 2002 – Socio-economic characteristics of gill and beach-seine net fishers in the Western Cape, South Africa. *S. Afr. J. mar. Sci.* **24**: 243-262
- VAN TETS, I. G., HUTCHINGS, K. and S.W. NICHOLSON 2000 – Relative merits of using purified proteins and natural foods in studies of wildlife nutrition: the nitrogen requirements of a rodent pollinator. *African Zoology* **35**(2): 207-215.
- HUTCHINGS, K., LAMBERTH, S. J. and C. L. GRIFFITHS 1999 – Gill nets and line-fish, what is the catch? *SANCOR Occasional Report* **5**: 77-84

CONSULTING RESEARCH REPORTS:

- HUTCHINGS K and CLARK BM. 2020. Fourth Monitoring Survey Report for the Abalone Ranching Concession Area NC4. Technical Report No. 1901/1 Prepared by Anchor Research & Monitoring for Diamond Coast Abalone
- HUTCHINGS K, SCHMIDT K and BM CLARK 2020. Habitat and Stock Assessment Report for the Abalone Ranching Concession Area NC4. Technical Report No. 1901/2 Prepared by Anchor Research & Monitoring for Diamond Coast Abalone
- HUTCHINGS K and CLARK BM. 2020. Monitoring Survey Report for the Abalone Ranching Concession Area NC3. Technical Report No. 1872/1 Prepared by Anchor Environmental Consultants for Port Nolloth Sea Farms Ranching (Pty) Ltd.
- HUTCHINGS K AND CLARK BM. 2019. Baseline Survey Report for the Abalone Ranching Concession Area NC2. Technical Report No. 1873/1 Prepared by Anchor Environmental Consultants for Diamond Coast Aquaculture (Pty) Ltd.
- HUTCHINGS K and WRIGHT AG. 2020. Fish Community Survey of Lake Michelle, Noordhoek. Specialist Report no. 1881/1 prepared by Anchor Environmental Consultants (Pty) Ltd for Lake Michelle Estate. 17pp
- BROWN E, MOSTERT B, GIHWALA K, HUTCHINGS K and CLARK BM. 2020. City of Cape Town, Effluent Pipelines Biomonitoring, Annual Report no. 1865/3 prepared by Anchor Research & Monitoring (Pty) Ltd. 31pp.
- MOSTERT B., HUTCHINGS K., GIHWALA K., DAWSON J & CLARK B.M. 2020. Saldanha Bay sea-based Aquaculture Development Zone baseline benthic survey report. Report no. 1895/5 prepared by Anchor Research and Monitoring (Pty) Ltd for the Department of Environment Forestry and Fisheries 45 pp.
- 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
- DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND DEVELOPMENT PLANNING, 2020. Environmental flows and the health and value of the Berg River Estuary: Potential trade-offs between estuary value and regional water supply under a changing climate. Cape Town, South Africa: DEA&DP
- DAWSON J, HUTCHINGS K & BM CLARK. 2020. Assessment of impacts for the proposed slipway and jetty on ERF 424 Malgas, the Breede River Estuary, South Africa. Specialist Report no. 1918/1 prepared by Anchor Research and Monitoring (Pty) Ltd for Guillaume Nel Environmental Consultants. 47 pp.
- BICCARD A, HUTCHINGS K, WRIGHT AG, MOSTERT BM, SEDICK S and CLARK BM. 2020. The State of St Helena Bay 2020. Report No. AEC 1908/1 prepared by Anchor Environmental Consultants (Pty) Ltd for the St Helena Bay Water Quality Trust. Pp 113.
- HUTCHINGS K, MASSIE V, AND CLARK BM. 2019. Environmental & Risk Assessment for an Application for a Right to Engage in an Abalone Ranching Pilot Project. Report prepared for Doring Bay Abalone (Pty) Ltd. by Anchor Environmental Consultants (Pty) Ltd. Report no 1857/1.

- DAWSON J, WRIGHT A, HUTCHINGS K & CLARK BM. 2019. Benthic Mapping Assessment for the Proposed Algoa Bay Sea-based Aquaculture Development Zone. Report prepared for Department of Agriculture, Forestry & Fisheries by Anchor Research and Monitoring (PTY). Ltd. Report no. 1817/1. March 2019.
- HUTCHINGS K, LAIRD M, WRIGHT A, & CLARK B. 2019. Algoa Bay Sea-based Aquaculture Development Zone. Basic Assessment Process in Terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998). Marine Specialist Impact Assessment – June 2019. Report No. 1808/2 prepared for the Department of Agriculture, Forestry and Fisheries (DAFF) by Anchor Research and Monitoring (Pty) Ltd. 89 pp.
- HUTCHINGS K, CLARK BM & B. MOSTERT 2018 Marine Specialist Study Berbera Port Expansion, Environmental, Social and Health Impact Assessment: Specialist Marine Study Prepared for WSP Africa.
- HUTCHINGS K, VAN NIEKERK, LAIRD MC, CLARK BM, TSHINGANA B, MASSIE V, C-L. RAMJUKADH AND R. BUTTON 2018. Assessment of the impacts of a reverse osmosis desalination plant on the Piesang estuary and nearshore marine habitats Plettenberg Bay. Report no. 1788/1 prepared by Anchor Environmental Consultants(Pty) Ltd and the CSIR for Aurecon South Africa. Pp. 89.
- HUTCHINGS K, CLARK BM, MOSTERT B AND V. MASSIE 2018. Kola Transshipment Zone Environmental Assessment. Wet Season Field Survey Report and Ecotoxicology Testing Results. Report no. 1783/3 prepared by Anchor Environmental Consultants for the Biodiversity Company. Pp. 59
- HUTCHINGS K, CLARK BM, MOSTERT B AND E. BROWN. 2017 Sierra Rutile Project Area 1, Environmental, Social and Health Impact Assessment: Specialist Estuarine Study Prepared for SRK Consulting.
- HUTCHINGS K, WRIGHT A. & B.M. CLARK 2017. Easigas Pty Ltd Mossel Bay natural gas import project. Marine baseline report prepared by Anchor Environmental Consultants for SRK Consulting (South Africa) Pty Ltd.
- WRIGHT, A.G., HUTCHINGS, K., CLARK B.M. & J. TURPIE. 2017. Socio-economic assessment of a 60% reduction in Viking Fishing Group's allocation in the inshore demersal trawl fishery. Report prepared for Viking Fisheries Group by Anchor Environmental Consultants (pty) Ltd. Report no. 1751/1, 25 pp.
- HUTCHINGS K and CLARK BM. 2017. Marine Impact Assessment for the Proposed Offshore Disposal of Dredge Material from the Port of Durban, Kwazulu Natal. Report no. 1728/1 prepared by Anchor Environmental Consultants for Nema Consulting.
- HUTCHINGS K and CLARK BM. 2017. Monitoring Survey Report for the Abalone Ranching Concession Area NC3. Technical Report No. 1417/4 Prepared by Anchor Environmental Consultants for Port Nolloth Sea Farms Ranching (Pty) Ltd
- HUTCHINGS K, FORSYTHE K & CLARK B.M. 2016. City of Cape Town Surface Stormwater Systems, Estuary Impact Assessment reports (8). Prepared by Anchor Environmental Consultants for City of Cape Town.
- HUTCHINGS K & CLARK B.M. 2016. Diving surveys of the Eastern Cape Abalone Resource Management Areas 1 & 6. Technical Report prepared by Anchor Environmental Consultants for the Department of Agriculture, Forestry and Fisheries

- HUTCHINGS K AND CLARK BM. 2016. Monitoring Survey Report for the abalone ranching concession area NC3. Technical Report no. 1556/3 prepared by Anchor Environmental Consultants for Port Nolloth Sea Farms Ranching (Pty) Ltd.
- HUTCHINGS K & CLARK B.M. 2016. Relocation of rock lobster *Jasus lalandi* and abalone *Haliotis midae* from the wreck of the Harvest Sirius in Salmander Bay Saldanha. Report prepared for the Department of Agriculture, Forestry and Fisheries.
- HUTCHINGS K & CLARK B.M. 2016. Proposed HDPE pipeline and sea water intake and discharge for Oiltanking MOGS Saldanha (RF) (PTY) LTD. Marine Impact Assessment Report prepared by Anchor Environmental Consultants for WorleyParsons RSA (Pty) Ltd and Oiltanking MOGS (Pty).
- HUTCHINGS K & CLARK B.M. 2016. Biodiversity risk assessment for Tristan rock lobster *Jasus paulensis*. Prepared by Anchor Environmental Consultants for Royal Society for the Protection of Birds.
- HUTCHINGS K & CLARK B.M. 2016. Hillside Aluminium Desalination Plant. Marine and Estuarine Impact Assessment Report prepared by Anchor Environmental Consultants for SE Solutions (Pty) Ltd and South32 Aluminium SA Limited.
- HUTCHINGS K & CLARK B.M. 2016. Saldanha Ankerlig natural gas import project. Marine baseline study report prepared by Anchor Environmental Consultants for MOGS (Pty) Ltd
- HUTCHINGS, K, LAIRD, MC and BM CLARK. 2016. Marine Specialist Report. Upgrade of the current sea based outfall for treated sewage effluent at Cape Recife, Port Elizabeth. Prepared for: CEN Integrated Environmental Management Unit.
- PULFRICH A & HUTCHINGS K. 2016. Survey of Sandy-Beach Macrofaunal Communities on the *Sperrgebiet* Coastline . Consolidated Beach Monitoring Report: 2014. Prepared for: NAMDEB Diamond Corporation (Pty) Ltd.
- HUTCHINGS, K, CLARK BM & MC LAIRD. 2015. Marine Impact Assessment Simonstown-Glencairn Railway Rehabilitation and Maintenance Work. Prepared for: Marutleng SHE Services.
- HUTCHINGS, K. & BM CLARK 2015. Environmental sensitivity assessment Umzumbe estuary KZN. Prepared for: Environmental Planning and Design CC.
- HUTCHINGS, K, CLARK BM & MC LAIRD. 2015. Baseline marine report. Upgrade of discharge of treated sewage effluent into the sea at Cape Recife, Port Elizabeth. Prepared for: CEN Integrated Environmental Management Unit.
- HUTCHINGS, K. & A BICCARD 2015. Gecko Namibia Vision Industrial Park Development Baseline Field Survey Report: Surf Zone Fish. Prepared for: Pisces Environmental Services (Pty) Ltd.
- CLARK BM, HARMER RW, HUTCHINGS K, MASSIE VKR, BROWN EA and LAIRD MC. 2015. Baseline Environmental Monitoring of Sand Banks in the Port of Durban. Technical Report No. 1486/4 prepared by Anchor Environmental Consultants for Nema Consulting and Transnet National Ports Authority.
- HUTCHINGS, K. & BM CLARK 2014.

- Baseline survey and monitoring plan for abalone concession area NC3. Prepared for Port Nolloth Sea Farms Ranching (PTY) LTD.
- HUTCHINGS, K. & BM CLARK 2014. Assessment of the potential impacts of the Durban dig-out Port breakwater on the annual Kwa-Zulu Natal sardine migration. Prepared for Transnet National Ports Authority.
- PULFRICH A, HUTCHINGS K, BICCARD A. CLARK BM & MC LAIRD. 2014. Survey of Sandy-Beach Macrofaunal Communities on the *Sperrgebiet* Coastline . Consolidated Beach Monitoring Report: 2014. Prepared for: NAMDEB Diamond Corporation (Pty) Ltd.
- LAIRD MC, HUTCHINGS K & BM CLARK 2014. Marine Ecology Screening Report for Proposed Abalone Aquaculture Farms at Doringbaai, West Coast, South Africa. Prepared for: SRK Consulting.
- LIEBAU V, HUTCHINGS K & BM CLARK 2014. Biodiversity Risk Assessment for King Salmon *Oncorhynchus tshawytscha*. Prepared for: Molapong Aquaculture.
- LIEBAU V, HUTCHINGS K & BM CLARK 2014. Biodiversity Risk Assessment for Coho Salmon *Oncorhynchus kisutch* Prepared for: Molapong Aquaculture.
- TURPIE J, FEIGENBAUM T, TALBOT M, HAYMAN M, CHIPEYA T & K HUTCHINGS 2014. Baseline Socio-Economic Assessment. GEF Grant No. TF096152: Development, Empowerment and Conservation in the iSimangaliso Wetland Park and Surrounding Region. Component 1: Analysis of alternatives to determine the most feasible solution to the hydrological issues of the Lake St Lucia estuarine system. Compiled for: iSimangaliso Wetland Park Authority.
- CLARK BM, LAIRD M, HUTCHINGS K, LIEBAU V, BICCARD A, TURPIE J, & PARKER-MALLICK N. 2014. *The State of Saldanha Bay and Langebaan Lagoon 2013/2014*. Technical Report. Report no. 1581/1 prepared by Anchor Environmental Consultants for the Saldanha Bay Water Quality Trust.
- HUTCHINGS, K, CLARK BM & JK TURPIE 2014. Socio-economic implications of an alternative minimum sardine TAC. Prepared South African Pelagic Fishing Industrial Association.
- HUTCHINGS, K. & BM CLARK 2013 Development of a Strategy for Research in the Fisheries Sector. Prepared for: Chief Directorate: Fisheries Research and Development Department of Agriculture, Forestry and Fisheries.
- HUTCHINGS, K. 2013. Assessment of fish factory effluent water quality. Report prepared for Sea Harvest, Saldanha Bay.
- HUTCHINGS, K & A. BICCARD. 2013. Diving Surveys of the Eastern Cape Abalone Resource. Report prepared for the Department of Agriculture, Forestry and Fisheries.

- HUTCHINGS, K, PORTER, S, & BM CLARK, 2013. Environmental Impact Assessment Marine aquaculture development zones for fin fish cage culture. Description of the Affected Environment. Impact Assessment Marine Specialist Report prepared for Directorate Sustainable Aquaculture Management: Aquaculture Animal Health and Environmental Interactions Department of Agriculture, Forestry and Fisheries.
- HUTCHINGS, K, PORTER, S., & BM CLARK 2013. Environmental Impact Assessment: Marine aquaculture development zones for fin fish cage culture. Impact Assessment Report. Marine Specialist Report prepared for Directorate Sustainable Aquaculture Management: Aquaculture Animal Health and Environmental Interactions Department of Agriculture, Forestry and Fisheries.
- TURPIE, J.K., HUTCHINGS, K., CLARK, B.M. & CLARKE, F. 2012. Potential impacts of the proposed Addo Elephant National Park Marine Protected Area on commercial fisheries and their value. Unpublished report to South African National Parks. Anchor Environmental Report No. 1490-01.
- CLARK, B.M, TUNLEY, K., HUTCHINGS, K., JURK C, GERICKE J and J. TURPIE 2012 - State of the Bay 2011: Saldanha Bay and Langebaan Lagoon. Report for the Saldanha Bay Water Quality Trust.
- CLARK, B.M., PULFRICH, A. and K. HUTCHINGS 2012 - Sandy beach and rocky intertidal monitoring studies in the Bogenfels and MA1 mining licence areas, Namibia. 2012 monitoring report. Report for Namdeb Diamond Corporation, Namibia.
- HUTCHINGS, K. & CLARK, B.M. 2012. Marine specialist report and impact assessment for the proposed brackish water reverse osmosis desalination plant discharge at Port Alfred. Report prepared for Coastal Environmental Services and the Amathole Water Board.
- CLARK, B.M., PULFRICH, A., and K. HUTCHINGS 2011 - Sandy beach and rocky intertidal monitoring studies in the Bogenfels and MA1 mining licence areas, Namibia. 2011 monitoring report. Report for Namdeb Diamond Corporation, Namibia.
- HUTCHINGS, K, PORTER, S., CLARK, B.M and K. SINK 2011. Strategic Environmental Assessment: Identification of potential marine aquaculture development zones for fin fish cage culture. Report prepared for Directorate Sustainable Aquaculture Management: Aquaculture Animal Health and Environmental Interactions Department of Agriculture, Forestry and Fisheries.
- HUTCHINGS, K, CLARK, B.M and K. TUNLEY 2011. Marine baseline report for a proposed reverse osmosis desalination plant at Lamberts Bay. . Report prepared for: Element Consulting Engineers (Pty) Ltd.

- PORTER, S., HUTCHINGS K. & BM CLARK 2011 Environmental assessment for the abalone (*Haliotis midae*) ranching right application (phase 2) of really useful investments no.72 (PTY) Ltd. in the Northern Cape (area NC2).
- HUTCHINGS, K. & CLARK, B.M. 2011 Review of Strategic Environmental Assessment: “The Identification of Sea-Based Sites Suitable for Marine Aquaculture Development Zones in South Africa” Report prepared for the Department of Agriculture, Forestry and Fisheries.
- HUTCHINGS, K. & CLARK, B.M. 2011 Saldanha reverse osmosis desalination plant: benthic macrofauna and sediment baseline survey. Report prepared for CSIR (Stellenbosch).
- CLARK, B.M & K. HUTCHINGS. 2011 Report on Fish Sampled In The Century City Wetlands And Canals. Report prepared for Century City Property Owners Association (CPOA).
- HUTCHINGS, K. CLARK B.M. and C. van Zyl 2010. Marine water quality monitoring report for the reverse osmosis desalination plant at Myoli beach, Sedgefield. Report prepared for Cape Environmental Assessment Practitioners.
- HUTCHINGS, K. & CLARK, B.M. 2010. Assessment of the effects of heavy metal accumulation from land based sources on the Diep estuary. Unpublished report prepared for Department of Environmental Affairs & Development Planning, Western Cape Government by Anchor Environmental Consultants, Cape Town.
- HUTCHINGS, K. & CLARK, B.M. 2010. Assessment of Port Owen marina dredging activities on the Berg River estuarine fish and macrobenthos communities. Unpublished report prepared for the Port Owen Marina Authority, Veldrif.
- HUTCHINGS, K, CLARK, B.M and K. TUNLEY 2010 Marine specialist report and impact assessment for the proposed reverse osmosis desalination plant at Plettenberg Bay. Report prepared for Aurecon South Africa (Pty) Ltd.
- HUTCHINGS, K. & CLARK, B.M. 2010. Marine specialist impact assessment for a proposed reverse osmosis desalination plant at Port Nolloth. Report prepared for BVi Consulting Engineers (Springbok).
- CLARK, B.M, TUNLEY, K., HUTCHINGS, K., ANGEL, A and J. TURPIE 2010 - State of the Bay 2010: Saldanha Bay and Langebaan Lagoon. Report for the Saldanha Bay Water Quality Trust.
- CLARK, B.M., PULFRICH, A., and K. HUTCHINGS 2010 - Sandy beach and rocky intertidal monitoring studies in the Bogenfels and MA1 mining licence areas, Namibia. 2010 monitoring report. Report for Namdeb Diamond Corporation, Namibia.

CLARK, B., ORR, K and K. HUTCHINGS 2009 - Cape Town City Council Coastal Monitoring Programme: Situation Assessment. Report to the City of Cape Town.

HUTCHINGS, K., and B.M. CLARK 2009 Report on fish sampled in the century city wetlands and canals, 18-20 February and 5-6 March 2009. Report to the Century City Property Management Company.

HUTCHINGS, K., and B.M. CLARK 2009 - Draft environmental assessment report and rehabilitation plan for the Jakkalsvlei estuary. Report for Jeffaries & Green (Pty) Ltd.

TURPIE, J.K., CLARK, B.M., HUTCHINGS, K., ORR, K.K. and J. DE WET 2009 - Ecology, value and management of the Kogelberg Coast. Report for WWF-CAPE Marine Programme.

CLARK, B.M., ORR, K.K., HUTCHINGS, K., ANGEL, A and J. TURPIE 2009 - State of the Bay 2009: Saldanha Bay and Langebaan Lagoon. Report for the Saldanha Bay Water quality Trust.

HOLLYWOOD C. and K. HUTCHINGS 2009 - West coast rock lobster (WCRL) 2008/2009 recreational fishery telephone survey report. Report for Marine and Coastal Management.

HUTCHINGS, K., and B.M. CLARK 2009 Baseline report on the status and sensitivity of the coastal marine environment off Oudekraal on the Cape Peninsula, with notes on developmental constraints. Report prepared for Doug Jeffery Environmental Consultants.

HUTCHINGS, K, CLARK, B.M and K. TUNLEY 2009. Baseline report on the marine ecology and impact assessment of proposed residential development at Partridge Point on the Cape Peninsula. Report for Chand Environmental Consulting.

HUTCHINGS, K., and B.M. CLARK 2009. Marine specialist baseline report and impact assessment of a proposed reverse osmosis desalinization plant at Myoli beach, Sedgefield. Report prepared for Cape Environmental Assessment Practitioners.

CLARK, B.M., PULFRICH, A., and K. HUTCHINGS 2009 - Sandy beach and rocky intertidal monitoring studies in the Bogenfels mining licence area, Namibia. 2009 monitoring report. Report for Namdeb Diamond Corporation, Namibia.

HUTCHINGS, K., HOLLYWOOD, C., and B. M. CLARK 2008. Training manual for sea going fisheries observers. Compiled to facilitate deployment of scientific fisheries observers on behalf of Marine and Coastal Management (DEAT Cape Town).

HUTCHINGS, K., HOLLYWOOD, C., and B. M. CLARK 2008. Training manual for shore based fisheries observers. Compiled to facilitate deployment of scientific fisheries observers on behalf of Marine and Coastal Management (DEAT Cape Town).

- CLARK, B., TURPIE, J. and K. HUTCHINGS 2008 – Olifants Estuary Management Plan Part 1: Situation assessment. Report to Cape Nature and the CAPE Estuary Management Programme.
- CLARK, B., TURPIE, J. and K. HUTCHINGS 2008 – Olifants Estuary Management Plan Part 2: Management Plan. Report to Cape Nature and the CAPE Estuary Management Programme.
- HUTCHINGS, K. and B. M. CLARK 2008 - Environmental assessment of Port Nolloth Seafarm's abalone (*Haliotis midae*) ranching operation. Report for: Marine and Coastal Management.
- CLARK, B., TURPIE, J. and K. HUTCHINGS 2008 – Berg River Estuary Management Plan Part 1: Situation assessment. Report to Cape Nature and the CAPE Estuary Management Programme.
- CLARK, B., TURPIE, J. and K. HUTCHINGS 2008 – Berg River Estuary Management Plan Part 2: Management Plan. Report to Cape Nature and the CAPE Estuary Management Programme.
- CLARK, B.M., PULFRICH, A., and K. HUTCHINGS 2008 - Sandy beach and rocky intertidal monitoring studies in the Bogenfels mining licence area, Namibia. 2008 monitoring report. Report for Namdeb Diamond Corporation, Namibia.
- HUTCHINGS, K., CLARK, B. M & E.M. YELD 2007 - Environmental overview study for exploration oil and gas drilling in the shallow water Tano block Ghana. Prepared for: TULLOW OIL PLC.
- CLARK, B.M., HUTCHINGS, K., JOSKE, M. & A. DUFFEL-CANHAM 2007 - Submerged macrophytes and macroalgae in the Berg River Estuary. Report compiled for the Department of Water Affairs and Forestry.
- CLARK, B.M., PULFRICH, A., and K. HUTCHINGS 2007 - Sandy beach and rocky intertidal monitoring studies in the Bogenfels mining licence area, Namibia. 2007 monitoring report. Report for Namdeb Diamond Corporation, Namibia.
- HUTCHINGS, K., CLARK, B., STEFFANI, N. and R. ANDERSON 2007 – Identification of communities, biotopes and species in the offshore areas and along the shoreline and in the shallow subtidal areas in BCLME region:1. Angola Field Survey Report. Prepared for Benguela Environment Fisheries Interaction and Training Programme (BENEFIT).

- HUTCHINGS, K and A. DUFFEL-CANHAM 2007 - Acute toxicity of treated ballast water discharge from the Resource Ballast Technology reactor to South African marine and estuarine organisms. Report compiled for Resource Ballast Technology.
- HUTCHINGS, K., ATKINSON, L. J. and B. M. CLARK 2006 - Sampling and Identification of Marine Fauna and Flora in the Port of Port Elizabeth. Report compiled for the National Ports Authority.
- CLARK, B. M., BENNO, B.L., HUTCHINGS, K., KAMUGISHA, S., LUGOMELA, G., LUKAMBUZI, L., MATERU, E. and D. SALUM. 2006 - IUCN Water and Nature Initiative, Pangani River Basin Flow Assessment Initiative, Estuarine Health Assessment. Prepared for: Pangani Basin Water Office.
- CLARK, B., WANLESS, R. and K. HUTCHINGS 2006 - Data management facility for the South African National Antarctica Programme (SANAP): Investigation of stakeholder requirements and an assessment of potential host institutions. Report compiled for the Department of Science and Technology.
- HUTCHINGS, K., GRIFFITHS, M. H. and J. G. FIELD 2004, 2005 – Taxonomy, Biology and Management of *Umbrina* species. Year-end reports for the Department of Environmental Affairs and Tourism, Marine and Coastal Management.
- HUTCHINGS, K., and B.M. CLARK 2005 - Due diligence study on Unagi International Plc/Sa eels (Pty.) Ltd. proposed eel aquaculture and processing facility at Dimbaza, Eastern Cape. Report prepared for the National Empowerment Fund.
- CLARK, B., HUTCHINGS, K. and D. GAYNOR 2005 - Table Mountain National Park - Fisheries and Environmental Monitoring Programme. Interim report on the first three months data collection. Report compiled for WWF SA and SANP.
- ATKINSON, L. HUTCHINGS, K., CLARK, B. M., and J. K. TURPIE – 2006 Saldanha Bay, State of the Bay Technical Report. Compiled for the Saldanha Bay Water Quality Trust.
- HUTCHINGS, K. 2005 - Preliminary assessment of the potential impacts of a boat launching site on the marine and estuarine environment at Mbotyi River mouth. Report compiled for EMROSS consulting CC.
- HUTCHINGS, K. and S. J. LAMBERTH 2000 - Management and Socio-economic Considerations for the Gill and Beach-seine Net Fisheries on the West and South-western Coasts of South Africa. Final report for the Department of Environmental Affairs and Tourism Marine and Coastal Management.
- HUTCHINGS, K. 2000 – Marine Gill and Beach-seine Net Fishing Activity in the Northern and Western Cape Provinces. Report compiled for the Subsistence General Fisheries

Working Group, Department of Environmental Affairs and Tourism, Marine and Coastal Management.

CLARK, B., HUTCHINGS, K., and K. PROCHAZKA 1999 – Investigation into the impacts of bait collection of wonder worm *Marphysa sp.* in the Western Cape. Report for the Department of Environmental Affairs and Tourism, Marine and Coastal Management.

CHERUSCHA SWART

DATE OF BIRTH: 3 November 1988

NATIONALITY: South African

ACADEMIC QUALIFICATIONS

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

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

BSc Biodiversity and Ecology, Stellenbosch University, 2010 – 2012

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: cheruscha@anchorenvironmental.co.za

EMPLOYMENT HISTORY: 2018 – Present — Environmental Consultant: Anchor Environmental Consultants

2014 – 2017 — Assistant Research Consultant: Stellenbosch University

2014 – 2015 — Research Intern: National Research Foundation

SUMMARY PROFILE

Cheruscha is very passionate about the natural environment and its conservation. She attained a MSc Biodiversity and Ecology degree, Cum Laude, at Stellenbosch University. Her work focused on producing and implementing novel approaches to understand the drivers governing successful invasions, their impacts and identifying species of concern. Her project was the first in South Africa to identify, prioritise and create a watch-list of emerging marine crab invaders. Her training and experience have made her highly competent within a variety of disciplines, including environmental monitoring and assessments, terrestrial and marine ecology, invasion biology, conservation biology and marine invertebrate taxonomy and biology. Her other interests also include environmental legislation and management, environmental impact assessments and sustainable development. This has prompted her to undertake and assist with projects within these disciplines. Cheruscha is the author of three peer reviewed scientific publications and has contributed to numerous scientific reports. Within Anchor Environmental Consultants, she works as an Environmental Consultant and ecologist, marine invertebrate Taxonomist and assists the Environmental Assessment Practitioner with Environmental Impact Assessments.

PROJECTS UNDERTAKEN

Period	Country	Clients	Project, Tasks
2021/ 2022	South Africa	SANEK Liquidators	Stonehurst mountain Estate Phase 4 Development — Environmental Site Officer Tasks: <ul style="list-style-type: none"> • Liaising with stakeholders and contractors on environmental related matters; • Attendance of site meetings and drafting of the meeting minutes; • Compiling ESO reports; • Reviewing and approving Method Statements from contractors; • Providing environmental awareness training to the Contractor, Sub-contractors and his employees; • Undertake site inspections to ensure compliance with both the EMP and Method Statements; • Recording environmental incidents and corrective and preventive actions; • Issuing of compliance directives and stop orders; • Finding environmentally acceptable solutions to construction problems and updating the EMP accordingly.
2021/ 2022	South Africa	Trans Atlantic Diamonds	Basic Assessment Process and application for prospecting rights in the offshore sea concession area 12B, Western Cape Tasks <ul style="list-style-type: none"> • Applying for prospecting rights and Environmental Authorisation; • Conducting a Basic Assessment Process Under the supervision of the EAP; • Conducting Public Participation and stakeholder consultation; • Compilation Basic Assessment Report (BAR) and Environmental Management Programme (EMPr).
2021/ 2022	South Africa	Trans Atlantic Diamonds	Basic Assessment Process and application for prospecting rights in the offshore sea concession area 11C, Western Cape Tasks <ul style="list-style-type: none"> • Applying for prospecting rights and Environmental Authorisation; • Conducting a Basic Assessment Process Under the supervision of the EAP; • Conducting Public Participation and stakeholder consultation;

			<ul style="list-style-type: none"> • Compilation Basic Assessment Report (BAR) and Environmental Management Programme (EMPr).
2021/ 2022	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"> • Applying for prospecting rights and Environmental Authorisation; • Conducting a Basic Assessment Process Under the supervision of the EAP; • Conducting Public Participation and stakeholder consultation; • Compilation Basic Assessment Report (BAR) and Environmental Management Programme (EMPr).
2021/ 2022	South Africa	Trans Atlantic Diamonds	<p>Basic Assessment Process and application for prospecting rights in an offshore sea concession (B-concession) area in the Northern Cape</p> <p>Tasks</p> <ul style="list-style-type: none"> • Applying for prospecting rights and Environmental Authorisation; • Conducting a Basic Assessment Process Under the supervision of the EAP; • Conducting Public Participation and stakeholder consultation; • Compilation Basic Assessment Report (BAR) and Environmental Management Programme (EMPr).
2021/ 2022	South Africa	Trans Atlantic Diamonds	<p>Basic Assessment Process and application for prospecting rights in an offshore sea concession (C-concession) area in the Northern Cape</p> <p>Tasks</p> <ul style="list-style-type: none"> • Applying for prospecting rights and Environmental Authorisation; • Conducting a Basic Assessment Process Under the supervision of the EAP; • Conducting Public Participation and stakeholder consultation; • Compilation Basic Assessment Report (BAR) and Environmental Management Programme (EMPr).
2021/ 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</p> <ul style="list-style-type: none"> • Conducting a Basic Assessment Process Under the supervision of the EAP; • Conducting Public Participation and stakeholder consultation;

			<ul style="list-style-type: none"> • Conducting site visits and selected specialist assessments; • Compiling selected specialist compliance statements; • Compilation Basic Assessment Report (BAR) and Environmental Management Programme (EMPr).
2021	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; • 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 on: <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; • Compilation of report to support decision making and business plan development.
2018 – present (2021)	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"> • Invertebrate taxonomy; • Statistical analyses ; • Report writing.
2019 – present (2021)	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"> • Field research — sample collection; • Statistical analyses; • Report writing; • Report compilation and editing.

2018-present (2021)	South Africa	Mhlathuze Water	Mhlathuze Water Environmental Monitoring Programme for the Richards Bay Offshore Outfalls Region Tasks: <ul style="list-style-type: none"> • Invertebrate taxonomy; • Conducting sea urchin toxicity testing.
2021	South Africa	Cliff Path Action Group	Marine Environmental Impact Assessment for the Proposed Pedestrian Path to Connect the two Parts of the Hermanus Cliff Path via Poole's Bay Tasks: <ul style="list-style-type: none"> • Literature review and research; • Baseline survey of the environment; • Marine Specialist Impact Assessment; • Final Marine Specialist Impact Assessment Report.
2020	South Africa	Planet Capital and Cape Nordic Corporation	Proposed Land-based Aquaculture Facility near Elands Bay – Bat Specialist Impact Survey and Assessment Tasks: <ul style="list-style-type: none"> • Literature review and research; • Bat Specialist survey, acoustic monitoring and Impact Assessment; • Baseline survey of the environment; • Data analysis; • Final Bat Specialist Impact Assessment Report.
2020	South Africa	CSIR Coastal Systems Research Group	CSIR Coastal Systems Research Group Tasks: <ul style="list-style-type: none"> • Identify benthic invertebrate macrofauna;
2020	South Africa	Department of Environmental Affairs and Development Planning	Berg Estuary Valuation Study: Value of The Berg Estuary and Importance of Management Interventions Tasks: <ul style="list-style-type: none"> • Coordinating informal meetings; • Engaging and consulting with members of the local community.
2019 – 2020	South Africa	Planet Capital and Cape Nordic Corporation	Basic Assessment Process for the Proposed Land-based Aquaculture Facility near Elands Bay on the West Coast of South Africa Tasks: <ul style="list-style-type: none"> • Assisting with the Basic Assessment Process Under the supervision of the EAP; • Conducting Public Participation and stakeholder consultation; • Conducting site visits; • Assisting with compilation of the Basic Assessment Report (BAR) and Environmental Management Programme (EMPr).

2019	South Africa	Department of Agriculture, Forestry & Fisheries	Basic Assessment Process for the Proposed Sea-Based Aquaculture Development Zone in Algoa Bay, Eastern Cape Tasks: <ul style="list-style-type: none"> Assisting with the Basic Assessment process; Managing stakeholder database; Assisting with public participation.
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; Assisting with public participation arrangements; Liaising with stakeholders.
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"> Invertebrate taxonomy; Statistical analyses; 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

PUBLICATION RECORD — TECHNICAL REPORTS

SWART C, CLARK BM & S SEDICK. 2021. 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. 2021. 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. 2021. 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
-

CURRICULUM VITAE

SAFIYYA SEDICK

ACADEMIC QUALIFICATIONS:

MSc Zoology, 2018, Stellenbosch University

BSc (Hons) Biodiversity and Conservation Biology, 2014, University of the Western Cape

BSc Marine Biology & Ocean and Atmospheric Science, 2013, University of Cape Town

Additional Certifications

Marine Mammal Observer - Joint Nature Conservation Committee (JNCC)

Seafarer Medical Certification - South African Maritime Safety Authority (SAMSA)

Personal Survival Techniques - South African Maritime Safety Authority (SAMSA)

Competency in Security Awareness - South African Maritime Safety Authority (SAMSA)

COUNTRY EXPERIENCE: South Africa, Namibia

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

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

PHONE: +27-21-7013420

E-MAIL: safiyya@anchorenvironmental.co.za

EMPLOYMENT HISTORY: 2018-present: Consultant (Anchor Environmental Consultants)

2018 : Trainee (International Seabed Authority)

2017-2018: NRF Intern (South African Environmental Observation Network)

SUMMARY PROFILE

Safiyya has degrees in Zoology, Biodiversity & Conservation Biology, Marine Biology and Ocean & Atmospheric Science. She has working experience as a biodiversity expert, conservation biologist and marine invertebrate taxonomist. She is particularly interested in deep sea mining and has worked with organisations such as the International Seabed Authority. Her other interests include conservation planning, climate change and biodiversity. Safiyya has worked on a wide range of projects since she completed her university education in 2018, including the De Beers Marine Namibia Benthic Environmental Monitoring Programme, the State of the Bay Monitoring Programme for the Saldanha Bay Water Quality Forum Trust, the Richards Bay Outfalls Environmental Monitoring Programme, various Environmental Impact Assessment studies and a management plan for the Mhlathuze Estuary.

SKILLS: PRIMER v6 (Plymouth Routines in Multivariate Ecological Research), STATISTICA, SPSS (Statistical Package for Social Sciences), GRADISTAT, ESTIMATE S (Biodiversity Estimation), MEGA v7 (Molecular Evolutionary Genetics Analysis), MS Suite.

SELECT PROJECT EXPERIENCE

Period	Country	Clients	Project, Tasks
2020-Present	South Africa	City of Cape Town	Project Leader Construction of moorings, trace metal analysis and report writing.
2018 - Present	South Africa	De Beers Marine Namibia	Taxonomist De Beers Marine Namibia Environmental Monitoring Programme in the Atlantic 1 Mining License Area: Annual Benthic Sampling Campaign.
2019 - Present	South Africa	Saldanha Bay Water Quality Trust	Taxonomist, field scientist The State of Saldanha Bay and Langebaan Lagoon.
2019 - Present	South Africa	Mhlathuze Water	Taxonomist, toxicity testing Mhlathuze water environmental monitoring programme for the Richards Bay offshore outfalls.
2020 - Present	South Africa	KwaZulu Natal Department of Economic Development, Tourism and Environmental Affairs	Stakeholder management & Report writing The development of an Estuary Management plan for the uThongathi Estuary.
2020	South Africa	St. Helena Bay Water Quality Trust	Taxonomist The State of St Helena Bay.
2020	South Africa	City of Cape Town	Taxonomist, field scientist Biodiversity Assessment of select tidal pools in the Cape Town Metropoli
2019	South Africa	Rheinmetall Denel Munition	Taxonomist, field scientist Environmental monitoring and management programme for Rheinmetall Denel Munition Coastal Waters Discharge Permit.
2019 - 2020	South Africa	Department of Agriculture, Forestry and Fisheries (DAFF)	Stakeholder management Algoa Bay Sea-based Aquaculture Development Zone.

PUBLICATION RECORD

Steffani N, **Sedick S**, Rogers J, Gibbons MJ. 2015. Infaunal benthic communities from the inner shelf off Southwestern Africa are characterized by generalist species. PLoS ONE 10 (11):e0143637. doi:10.1371/journal.pone.0143637

Kara J, Simon CA, Clark DM, **Sedick S**. 2021. A checklist of priority species from South Africa with notes on diversity and taxonomic status. In review.

Sedick S, Simon CA. 2019. The description of three new *Syllis* species from the south coast of South Africa. Zootaxa 4688(4): 585-598.

Sedick S, Clark D, Biccard A, Gihwala K. 2021. The description of a new species of Lumbrineridae (Annelida) from southern Namibia. In prep.

Sedick S, Clark D, Gihwala K, Swart C. 2021. The description of a new species of Nereis (Annelida, Nereididae) from the shallow waters of southern Namibia. In prep.

CONSULTING REPORTS

- Sedick S**, Simone L, Hutchings K and Clark BM. 2021. City of Cape Town, Effluent Pipelines Biomonitoring, Field and Data Report no. 1865/4 prepared by Anchor Research & Monitoring (Pty) Ltd. 24pp.
- Sedick S**, K, Hutchings K and Clark BM. 2021. City of Cape Town, Effluent Pipelines Biomonitoring, Annual Report no. 1865/4 prepared by Anchor Research & Monitoring (Pty) Ltd. 36pp.
- Gihwala K, Wright AG, Mostert B, **Sedick S**, Biccard A, Mtsokoba S and K. Hutchings. 2021. PetroSA Vleesbaai Outfall Monitoring Programme: 2020 Survey. Specialist Report no. 1917/1 prepared by Anchor Research and Monitoring (Pty) Ltd for PetroSA. 107 pp.
- Dawson J, **Sedick S**, Hutchings K and Clark BM. 2021. uThongathi Estuary Management Plan Stakeholder Consultation Report. Specialist report no. 1905/10 prepared by Anchor Research & Monitoring (Pty) Ltd for the KwaZulu Natal Department of Economic Development, Tourism and Environmental Affairs (EDTEA). 140 pp
- Biccard A, Gihwala K, Clark BM, **Sedick S**, Swart C, Brown EA, Mostert BP, Dawson J, Mtsokoba S, Makhosonke A and Schmidt K. 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.
- Swart C, Clark BM and **Sedick S** 2021. 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. 54 pp.
- Gihwala K, Wright AG, Mostert B, **Sedick S**, Biccard A, Mtsokoba S and K. Hutchings .2021.PetroSAVleesbaai Outfall Monitoring Programme: 2020 Survey. Specialist Report no. 1917/1prepared by Anchor Research and Monitoring (Pty) Ltd for PetroSA. 107pp
- Clark BM, Dawson J and **Sedick S**. 2020. The development of an estuary management plan for the uThongathi Estuary. Inception Report no. 1905/1 prepared by Anchor Research & Monitoring (Pty) Ltd for the KwaZulu Natal Department of Economic Development, Tourism and Environmental Affairs (KZNEDTEA). 19 pp.
- Biccard, A., K. Gihwala, B.M. Clark, **S. Sedick**, E.A. Brown, B.P. Mostert, C. Swart, A. Makhosonke, B. Tshingana, A. Makhosonke and J. Dawson. 2020. 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. AEC 1807.
- Biccard A, Hutchings K, Wright AG, Mostert BM, **Sedick S** and Clark BM. 2020. The State of St Helena Bay 2020. Report No. AEC 1908/1 prepared by Anchor Environmental Consultants (Pty) Ltd for the St Helena Bay Water Quality Trust. 113 pp.

- Brown E, **Sedick S**, Hutchings K, Wright AG and Clark BM. 2020. Biodiversity Assessment of select tidal pools in the Cape TOWN Metropole. Specialist Report no. 1902/1 prepared by Anchor Research & Monitoring (Pty) Ltd for City of Cape Town. 43 pp.
- Clark BM, Hutchings K, Biccard A, Brown E, 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, September 2020.
- Biccard, A., K. Gihwala, B.M. Clark, E.A. Brown, B.P. Mostert, A. Makhosonke, C. Swart, **S. Sedick**, B. Tshingana and J. Dawson. 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.
- Mostert B., **Sedick S.** & B.M. Clark. 2019. Environmental impact and monitoring programme for Rheinmetall Denel Munition Coastal Waters Discharge Permit. Report no. 1852/1 prepared by Anchor Research and Monitoring (Pty) Ltd for Rheinmetall Denel Munition RF (PTY) LTD 54 pp.
- Clark B, Massie V, Hutchings K, Biccard A, Brown E, Laird M, Gihwala K, Swart C, Makhosonke A, **Sedick S**, Turpie J & Vermaak N. 2019. The State of Saldanha Bay and Langebaan Lagoon 2019, Technical Report. Report No. AEC 1841/1 prepared by Anchor Environmental Consultants (Pty) Ltd for the Saldanha Bay Water Quality Forum Trust, September 2019.

CONFERENCES & WORKSHOPS

- 2021 3rd Annual Workshop For The Promotion Of Sustainable Development Of Africas Deep Seabed Resources In Support Of Africas Blues Economy - International Seabed Authority (ISA)**
- 2021 DNA barcoding workshop series: From theory to practice**
- 2019 Workshop For The Promotion Of Sustainable Development Of Africas Deep Seabed Resources In Support Of Africas Blues Economy - International Seabed Authority (ISA)**
- 2015 Zoological Society of Southern Africa (ZSSA)**
- 2014 Southern African Marine Science Symposium**

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@anchorenvironmental.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, KwaZulu-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 Kleinsee, 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/ Nema 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/ Nema 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/ Nema 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 (DWAF)	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	Globalballast 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/ Globalballast 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 Globallast 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/ACO PS	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/ World-wide 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.