



CES EXPERTISE IN BIODIVERSITY MANAGEMENT, OFFSETS & SURVEYS

CES was established in 1990 when we were the lead consultants for the St Lucia environmental impact assessment for Richards Bay Minerals, one of the first large-scale EIAs conducted in South Africa. Since then, we have expanded our capabilities and now provide a wide variety of environmental and social advisory services to public and private-sector clients both within South Africa and internationally.

CES SPECIALISES IN ENVIRONMENTAL AND SOCIAL ADVISORY SERVICES

We believe that a balance between development and biodiversity safeguarding can be achieved by skilful, considerate, and careful assessment and planning.

At CES, we advocate the safeguarding of biodiversity while still achieving social and economic development. This approach is particularly relevant when dealing with sensitive biodiversity areas which are placed under increasing development pressure. In these situations, an ecological approach is essential. We also have experience in developing social and labour plans (SLPs) for the South African mining industry, and have undertaken scoping-level health impact assessments (HIAs) and livelihood restoration plans (LRPs). In some cases, we have assisted clients with the implementation of RAPs and associated programmes.

Our guiding principle is that ecologically sound development can be achieved through measurable biodiversity management actions, such as ecological restoration and establishing set-aside areas. The biodiversity team at CES is exceptionally well-qualified to do this, led by recognised experts in their scientific fields. Our team boasts post-graduate qualifications from MSc to PhD degrees in the Biological Sciences, with expertise in disciplines that include Zoology, Botany, Restoration Ecology, Microbiology, Coastal Ecology, Conservation and Biodiversity Planning and Estuarine Ecology.

CES, and its associates, have developed various management plans both internationally and in South Africa for biodiversity, including biodiversity offsets, vegetation rehabilitation plans, coastal and estuarine management plans, as well as conservation management plans. We also have designed and implemented various environmental monitoring programmes for especially the mining and renewable energy sectors, both in South Africa and internationally. Moreover, we have conducted several local and international terrestrial biodiversity (botanical and faunal) assessments and critical habitat assessments for large-scale developments, including wind farms, solar farms, mines, and agricultural and forestry operations.

For more information see www.cesnet.co.za



BIODIVERSITY OFFSETS AND MANAGEMENT PLANS

Biodiversity Offset and Management Plan, KwaZulu-Natal, South Africa

Biodiversity Offset Plan for the Waaihoek Wind Energy Facility (WEF) in KwaZulu Natal. This plan was approved and an agreement signed.

Biodiversity Offset and Management Plan, Eastern Cape, South Africa

Biodiversity Offset Plan for the Port St Johns Forest, related to the challenges associated with locating a Wastewater Treatment Plant in a biodiversity hotspot.

Biodiversity Assessment and Management Plan of Biodiversity Offset Receiving Areas, Wild Coast, South Africa

Dr Greer Hawley, in association with CES, completed a Biodiversity Site Assessment for the N2 Wild Coast Biodiversity Offset Project Area for the Eastern Cape Parks & Tourism Agency (ECPTA). CES provided professional services to undertake Biodiversity Site Assessments for over 20,000 ha of offset receiving areas and to develop Management Plans and Annual Operation Plans.

Wetland Offset Plan, Western Cape, South Africa

Eskom Holdings SOC Limited contracted CES to compile a Wetland Rehabilitation Offset for one of Eskom's substations and its associated pylons to comply with the National Water Act (Act 36 of 1998, as amended) (NWA). The development required an on-site wetland offset plan, together with an overall rehabilitation plan and alien vegetation management plan, to compensate for the permanent loss of up to 2 ha of wetland ecosystem.

Parsonsvlei Biodiversity Management Plan for an Ecosystem, South Africa

As part of the GEF Biodiversity and Land Use Project, the South African National Biodiversity Institute (SANBI) needed to undertake comprehensive stakeholder engagement as part of the process for the development of a Biodiversity Management Plan for an Ecosystem. This required the identification and participation of a range of stakeholders, which were classified as essential, general (non-essential) and veto stakeholders. Dr Greer Hawley, in association with CES,

prepared for, facilitated, and reported on the key outcomes of the Stakeholder Engagement Process, which included hosting three biodiversity workshops.

East London Harbour Biodiversity Management Plan, Eastern Cape, South Africa

CES developed the biodiversity management plan for the Transnet National Ports Authority (TNPA) in accordance with its Safety, Health, Environmental (SHE) policy.

Elephant Management Plan, Montepuez, Mozambique

CES conducted a habitat assessment and developed an Elephant Management Plan for the Suni Resources Graphite Mine north of Montepuez, to help it meet the International Finance Corporation (IFC) Performance 6 Standard.

Conservation Management Plan, Eastern Cape, South Africa

CES developed a conservation plan for the Nelson Mandela Metro University (NMMU) Nature Reserve as required by the National Environmental Management: Protected Areas Act (Act No. 57 of 2003).

Integrated Coastal Management Plan, Eastern Cape, South Africa

CES developed an integrated coastal management plan for four coastal local municipalities, namely Ngqushwa, Great Kei, Mnquma and Mbhashe, in the Amathole District Municipality in the Eastern Cape. CES identified seven key priority areas for coastal management and developed associated objectives and action plans for each.



BIODIVERSITY ASSESSMENTS

Kenmare Biodiversity Assessment, Moma, Mozambique

As part of the expansion of their existing mining and processing operations at their Namalope operations in Moma, Nampula Province, Mozambique, Kenmare requested CES to assist with the environmental licensing for the Pilivilli deposit that forms part of the larger Phase 3 expansion. This complex project necessitated 18 specialist studies, including terrestrial fauna and flora specialist studies, the development of a Biodiversity Management Plan and a Biodiversity Monitoring Programme.

Kenmare Ecological Screening Assessment, Nataka, Mozambique

CES, in association with BioDiversity Africa, conducted an Ecological Screening (Fauna and Flora) for Kenmare's Nataka deposit.

Bioregional Survey of *Icuria dunensis* for Kenmare Resources, Mozambique

In earlier work undertaken for a mineral mining EIA south of Kenmare's operations in the Moebase area of Mozambique, CES discovered a new species of tree, that was classified into its own genus, *Icuria*. This species occurred at Pilivili, and its presence could have resulted in the site being classified as Critical Habitat. CES

completed a Bioregional survey to determine the species distribution and determined that the Pilivili site did not exceed the population threshold, and consequently was not critical habitat for the species.

Kenmare Biodiversity Assessment, Namalope, Mozambique

CES conducted a Terrestrial Biodiversity Assessment (Flora and Fauna) for Kenmare’s Namalope mine in Mozambique.

Biodiversity Assessment, Chikweti Forest, Mozambique

CES conducted a biodiversity assessment for Chikweti Forests of Niassa Green Resources and evaluated the effectiveness of existing management efforts for these plantations and, where applicable, made changes to these plans to comply with Mozambique’s legislation and IFC Performance Standards.

Ecological Assessment, Ancuabe, Cabo Delgado, Mozambique

CES identified and mapped key biodiversity areas and critical habitats (as defined by the IFC’s Performance Standard 6), within that vicinity of the Ancuabe West Graphite Mine for Graphit Kropfmühl (GK). CES also conducted wet and dry season assessments covering fish and terrestrial fauna and flora. In addition, the scope included a wet season water quality baseline as well as the development of a water quality monitoring plan for the site.

JCM Solar Plant Biodiversity Assessment, Cameroon

CES conducted a biodiversity (flora and fauna) assessment for the JCM Solar Plant in Southern

Cameroon. The biodiversity of the site is intimately linked to two main ecosystems: wetlands and dry forest.

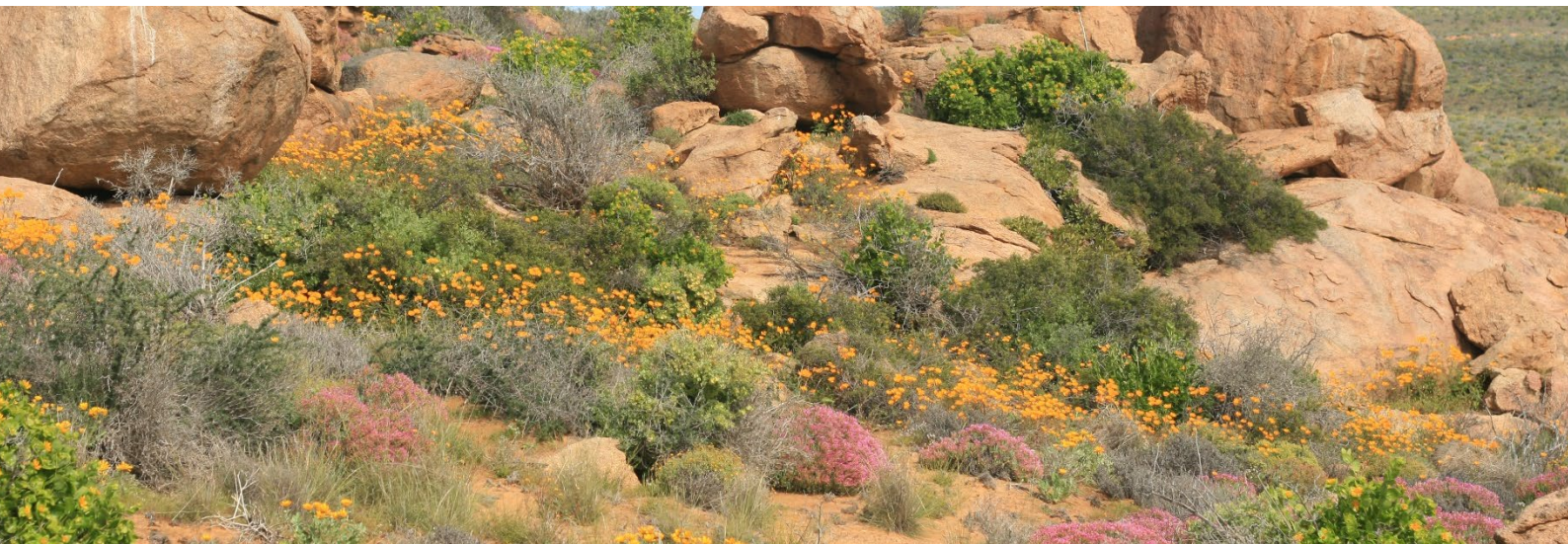
Terrestrial Biodiversity Assessments for WEFs, South Africa

CES have conducted numerous Terrestrial Biodiversity Assessments for several wind farm developers in the Cape Provinces. Our clients include EDF, Mulilo and WKN, to name a few.

“CES scientific rigour during baseline surveys in Mozambique resulted in the discovery of a new genus and species of tree, named *Icuria dunensis*. CES has also recorded numerous range extensions of both plant and faunal species during their extensive field surveys in northern Mozambique”

Terrestrial Biodiversity Assessment, Western Cape, South Africa

CES undertook environmental studies for the mandated South African gas & gas infrastructure company, iGas, who wanted to develop a gas pipeline from Saldanha Bay to the Eskom Ankerlig power station. These studies included botanical and faunal assessments to evaluate the ecological sensitivity of four alternate pipeline routes to assist iGas with route selection.



BIODIVERSITY MONITORING

Kenmare Terrestrial Biodiversity Monitoring Programme, Nampula, Mozambique

CES implemented this programme for over 6 years to assess biodiversity impacts of their Namalope operation and to assist Kenmare in reaching their terrestrial biodiversity goals in terms of the IFC 6 Performance Standard requirement of no net loss of biodiversity.

Kenmare Fauna and Flora Monitoring Programme, Pilivili, Mozambique

CES implemented this 2-year monitoring programme for the Pilivili mine. It included faunal and vegetation monitoring, as well as baseline monitoring of the Mangrove system associated with the Mualadi Estuary, which will also be affected by the operation.

Kenmare Marine Monitoring Programme, Moma, Mozambique

CES implemented this programme to gather information on the health of the affected marine ecosystem and

fishery operation close to Kenmare's Moma mine. This monitoring was required to assess the impacts of the large jetty constructed for the operation, and to determine any impacts from the shipping and barging operation.

Kenmare Wetland Biomonitoring Programme, Moma, Mozambique

CES implemented this programme in response to the deposition of slimes/clay within the Topuito wetland system after the accidental release of slimes from a tailings pond in Kenmare's Moma mine. This was later incorporated into Kenmare's routine environmental monitoring programme.

Operational Bird and Bat Monitoring Programme, Eastern Cape, South Africa

CES has managed and implemented the operational bird and bat monitoring programme for multiple operational wind farms in the Eastern Cape to ensure the developers' compliance with the best practice guidelines for monitoring birds and bats at wind energy facilities.

REHABILITATION PLAN DEVELOPMENT

Kenmare Moma Vegetation Rehabilitation Plan, Moma, Mozambique

CES formulated a rehabilitation strategy and rehabilitation plan for the Kenmare Namalope mine after vegetation clearing. This formed part of the basic framework on which Kenmare's Mine Rehabilitation Plan was based. Further rehabilitation plans have been developed by CES for the Pilivili and Nataka operations. The Pilivili plan included the restoration of selected set-aside areas in the coastal dune system.

Zirco Mine, West Coast, South Africa Vegetation Rehabilitation Plan

The proposed Zirco mine is located in the arid environs of the west coast of South Africa, in the Namaqualand Sandveld bioregion. Rehabilitation of arid environs often presents more challenges, which was all taken into consideration when CES developed the rehabilitation plan for Zirco Resources.

