



Dave Edge & Associates

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Biodiversity Surveys

Environmental Consulting

**BUTTERFLY BIODIVERSITY SENSITIVITY STUDY  
& COMPLIANCE STATEMENT  
DUINEKROON ERF 591, STILL BAY WEST  
WESTERN CAPE PROVINCE**

**Prepared for:**

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Cape Environmental Assessment Practitioners (Pty) Ltd  
P.O. Box 2070  
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6530

**Representing:**

QuickStep 596 (Pty) Ltd

**Prepared by:**

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**Date of issue:** 11<sup>th</sup> April 2022

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## **CREDENTIALS OF THE CONSULTANT**

### **Contact details:**

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Brenton-on-Sea  
Knysna  
6570

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### **Expertise**

- Qualifications: BSc (Zoology & Botany) UNISA; BSc (Hons) (Environmental Science) North-West University; MSc (Environmental Science) North-West University; PhD (Environmental Science) North-West University.
- Experience: Lepidopterist and ecologist with over 60 years' experience studying butterflies. Has conducted numerous specialist butterfly surveys in terms of NEMA.
- Publications/ conferences: 32 scientific papers published in peer reviewed journals, and has presented papers at a number of national and international conferences.

A more detailed CV is attached as Appendix 1.

### **Conditions pertaining to this report**

The content of this report is based on the author's best scientific and professional knowledge as well as available information. Dave Edge & Associates reserve the right to modify the report in any way deemed fit should new, relevant or previously unavailable or undisclosed information become known to the author from on-going research or further work in this field, or pertaining to this investigation, and will inform CapeEAPrac accordingly.

This report must not be altered or added to without the prior written consent of the author. This also refers to electronic copies of the report, which are supplied for the purposes of inclusion as part of other reports, including main reports. Similarly, any recommendations, statements or conclusions drawn from or based on this report must make reference to this report. If these form part of a main report relating to this investigation or report, this report must be included in its entirety as an appendix or separate section to the main report.

## NATIONAL LEGISLATION AND REGULATIONS GOVERNING THIS REPORT


This is a 'specialist report' compiled in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2014 and Specialist Protocols.

## DECLARATION BY THE INDEPENDENT PERSON WHO COMPILED THIS REPORT

I, **David Alan Edge**, as the appointed independent specialist hereby declare that I:

- act as an independent specialist in this application;
- regard the information contained in this report as it relates to my specialist input/study to be true and correct, and do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the NEMA, the Environmental Impact Assessment Regulations, 2014 and any specific environmental management Act;
- have and will not have any vested interest in the proposed activity proceeding;
- have disclosed, to the applicant, EAP and competent authority, any material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the NEMA, the Environmental Impact Assessment Regulations, 2014 and any specific environmental management Act;
- am fully aware of and meet the responsibilities in terms of NEMA, the Environmental Impact Assessment Regulations, 2014 (specifically in terms of Regulation 13 and Appendix 2 of GN No. R. 982) and any specific environmental management Act, and that failure to comply with these requirements may constitute and result in disqualification;
- have ensured that information containing all relevant facts in respect of the specialist input/study was distributed or made available to interested and affected parties and the public and that participation by interested and affected parties was facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments on the specialist input/study;
- have ensured that the comments of all interested and affected parties on the specialist input/study were considered, recorded and submitted to the competent authority in respect of the application; have ensured that the names of all interested and affected parties that participated in terms of the specialist input/study were recorded in the register of interested and affected parties who participated in the public participation process;
- have provided the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not; and am aware that a false declaration is an offence in terms of regulation 48 of GN No. R.982.

Signature of the Specialist:



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David Alan Edge

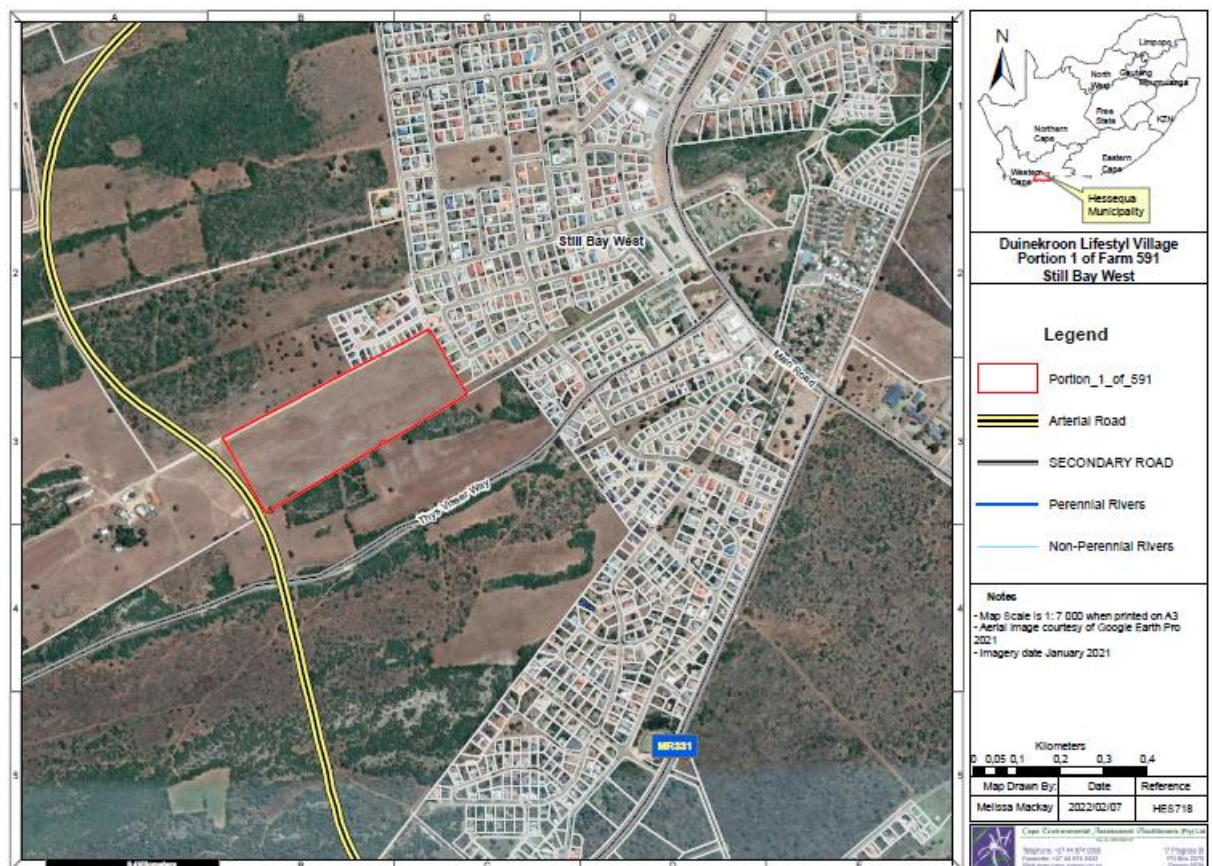
Representing:

Dave Edge & Associates

## 1. Introduction

Quickstep 596 (Pty) Ltd is planning to develop Duinekroon Erf 591/1, Still Bay West in the Western Cape Province (Figure 1). The developer has engaged the services of CapeEAPrac, George, to produce a Basic Assessment Report (BAR) for the proposed project. As part of this process the development plan was submitted to the Department of Environmental Affairs so that their Screening Tool (ST) could detect any terrestrial biodiversity sensitivities for the site. The ST reported that the following butterfly species of conservation concern (SCC) could occur at the site, based on its proximity to known records of the SCCs, and the physical and biological characteristics of the site:

*Aloeides thyra orientis*  
*Chrysoritis brooksi tearei*  
*Lepidochrysops littoralis*  
*Thestor claassensi*



**Figure 1** – Location of Duinekroon Erf 591/1 in Still Bay West, Western Cape Province

## 2. Terms of reference of the Consultant

Dave Edge & Associates was appointed on 23<sup>rd</sup> March 2022 by Louise-Mari van Zyl of CapeEAPrac, George, acting on behalf of QuickStep 596 (Pty) Ltd, to carry out a butterfly sensitivity survey for Duinekroon Erf 591/1, Still Bay West, with a scope of work as follows:

- 1) Carry out a desktop study to determine if the butterfly species of conservation concern (SCC) listed in section 1 above have been recorded at the site, or what is the probability, given the physical and biological characteristics of the site (including butterfly host plants) for the SCCs listed above in section 1 to occur there.
- 2) Conduct a preliminary survey at the property on or around 30<sup>th</sup> March 2022.
- 3) Prepare a report detailing the findings of the desktop study and the site survey, with conclusions and if necessary recommendations for any further investigations at the

property. The report may include, if the findings permit, the issuance of a Terrestrial Biodiversity Compliance Statement (TBCS) in respect of butterflies.

### 3. Methodology

#### 3.1 Desktop study

All records of butterflies, and specifically the butterfly SCCs listed in section 1, were extracted from the LepiMap Virtual Museum database and summarised on a spreadsheet. Published data on all the SCCs found (including possibly some not listed in section 1) were studied, principally Mecenero *et al.* (2020), to determine the vegetation types in which the SCCs occur, and Williams (2021) to determine any known larval host plants.

#### 3.2 Site visit

The property was surveyed to see if there was any indigenous vegetation (such as larval host plants or adult nectar plants) that could support either of the SCCs. Records of any butterflies or significant plants on the site (with GPS locations) were made and photographs taken.

### 4. Results

#### 4.1 Desktop study

##### Butterfly records and vegetation types

The proposed development site is situated in the quarter degree grid square (QDGS) 3421AD (Stilbaai). The records of the butterfly SCCs extracted from LepiMap are listed in Table 1. This exercise resulted in the discovery that there is another SCC that needs to be taken into account – *Aloeides pallida littoralis* (Near Threatened). The vegetation type at the site is FFI3 – Canca Limestone Fynbos (SANBI, 2018).

##### Butterfly SCCs flagged by the screening tool, or that have been recorded in QDGS 3421AD

##### *Aloeides pallida littoralis* (NT)

This subspecies has been recorded from Kogelberg (west) to Plettenburg Bay (east). The subpopulations vary considerably, and the taxon may consist of several undescribed subspecies. The population as a whole was assessed as Near Threatened, with the Still Bay population shrinking and in need of conservation. The larvae do not feed on plants, but are tended and fed by host ants in the *Lepisiota* genus. It has been found in vegetation types FFd9 Albertina Sand Fynbos and FFI3. The closest known occurrences are 3.5 km away in the Pauline Bohne Nature Reserve in Still Bay East.

##### *Aloeides thyra orientis* (EN)

This butterfly has been recorded along the south coast of the Western Cape from Witsand (QDGS 3420BD), in the Still Bay area (3421AB and 3421AD), near Gouritsmond (3421BD) and at Brenton-on-Sea (3422BB and 3423AA). The closest known occurrences to the development site are 1 km away, north of the golf course in Still Bay West. It has been recorded in vegetation types FFI3 and FFd9, preferring sparsely vegetated ground with bare patches. Its larval host plant is unknown.

##### *Chrysoritis brooksi tearei* (EN)

This SCC has been recorded in the Still Bay area in QDGSs 3421AB & AD. The closest known occurrences are at 1 km away, north of Still Bay West. Its recorded vegetation types are FFI3 and FFd9; its larval host plants are in the genus *Zygophyllum* (Zygophyllaceae), and its host ants are in the genus *Creumatogaster*.

##### *Lepidochrysops littoralis* (EN)

This species has a fairly wide distribution along the south coast, from the De Mond Nature Reserve near Bredasdorp in the west to 5 km west of Mossel Bay. The closest records to the development site are 3.5 km away in the Pauline Bohne Nature Reserve. Its larval host plants are in the genus *Selago* (Scrophulariaceae), and its host ants are in the genus *Camponotus*. It is mostly found in FFI3 Canca Limestone Fynbos, and prefers hilltops or higher ground.

*Thestor claassensi* (VU)

This species has a fairly limited distribution between Vermaaklikheid (3421AC) in the west to Still Bay in the east (3421AD). It has only been recorded in FFI3 Canca Limestone Fynbos, and prefers rocky areas where the limestone substrate is apparent. Its larvae do not feed on plant material and are fed in the ant nests by their host ants in the genus *Anoplolepis*. The closest records to the development site are 3.5 km away in the Pauline Bohne Nature Reserve.

#### 4.2 Site visit on 30<sup>th</sup> March 2022

The site visit was on a warm and windless day. The site has very few (almost zero) invasive plants and is gently sloping, facing ESE (see Figure 2). Horse grazing is practiced on the site and the predominant vegetation is lowly cropped grass species. Isolated patches of fynbos shrub species were seen (*Osteospermum moniliferum* (Bitou); *Senecio* sp.; *Asparagus lignosus*; *Brunsvigia orientalis*; *Solanum rigescens*; and *Carpobrotus deliciosus*). No *Zygophyllum* or *Selago* (butterfly host plants) were seen but if they are not in flower they are easily overlooked. Only seven butterfly species were recorded (Table 1).



**Figure 2** – Duinekroon Erf 596/1 Still Bay West, showing tracks walked during the site visit on 30<sup>th</sup> March 2022 (bold and pale yellow).

No parts of the site seem suitable for *Chrysoritis brooksi tearei*, *Thestor claassensi*, *Aloeides thyra orientis* or *Aloeides pallida littoralis* (which occur in fairly pristine fynbos); or *Lepidochrysops littoralis* which prefers higher ground with trees suitable for the males to patrol around, as seen in the Pauline Bohne reserve across the river.

#### 5. Terrestrial Biodiversity Compliance Statement (TBCS)

There is no significant probability of finding any of the butterfly SCCs on the site (see Table 2), mainly because of the degraded condition of the site, and absence of any butterfly host plants. Details are given in Table 2.

## 6. Conclusions

This proposed property development area on the western boundary of Still Bay West was rated by the Screening Tool (ST) as being of “Medium” sensitivity, because of the possibility of the occurrence of five butterfly species of conservation concern (SCC). This investigation has revealed that none of the five SCC butterfly species could occur on the site, because of its badly degraded condition and the absence of any SCC butterfly host plants.

## 7. References

- Mecenero, S., Edge, D.A., Staude, H.S., Coetzer, B.H., Coetzer, A.J., Raimondo, D.C., Williams, M.C., Armstrong, A.J., Ball, J.B., Bode, J.D., Cockburn, K.N.A., Dobson, C.M., Dobson, J.C.H., Henning, G.A., Morton, A.S., Pringle, E.L., Rautenbach, F., Selb, H.E.T., Van Der Colff, D. & Woodhall, S.E., 2020. Outcomes of the Southern African Lepidoptera Conservation Assessment (SALCA). *Metamorphosis* **31(4)**: 1–160.
- South African National Biodiversity Institute (SANBI). 2018. Vegetation map of South Africa, Lesotho & Swaziland. <http://bgis.sanbi.org/SpatialDataset/Detail/1674>.
- Williams, M.C. 2021. Afrotropical Butterflies. <https://www.metamorphosis.org.za/?p=articles&s=atb>



D.A. Edge

Dave Edge & Associates

11<sup>th</sup> April 2022



**TABLE 1 – Butterflies recorded in the LepiMap database from the QDGS 3421AD Stilbaai**

FAMILY	SCIENTIFIC NAME	COMMON NAME	RED LIST CATEGORY (SALCA 2020)	SITE RECORD
HESPERIIDAE	<i>Afrogegenes letterstedti</i>	Brown Dodger	Least Concern	Yes
HESPERIIDAE	<i>Afrogegenes ocrea</i>	Yellow Dodger	Least Concern	
HESPERIIDAE	<i>Eretis umbra umbra</i>	Small marbled Elf	Least Concern	
HESPERIIDAE	<i>Gomalia elma elma</i>	Green-marbled Skipper	Least Concern	
HESPERIIDAE	<i>Metisella malgacha malgacha</i>	Grassveld Sylph	Least Concern	
HESPERIIDAE	<i>Metisella metis paris</i>	Gold-spotted Sylph	Least Concern	
HESPERIIDAE	<i>Spialia mafa mafa</i>	Mafa Sandman	Least Concern	
HESPERIIDAE	<i>Spialia satastes</i>	Boland Sandman	Least Concern	
HESPERIIDAE	<i>Tsitana tulbagha kaplani</i>	Tulbagh Sylph	Least Concern	
LYCAENIDAE	<i>Actizera lucida</i>	Rayed Blue	Least Concern	
LYCAENIDAE	<i>Aloeides aranda</i>	Yellow Russet	Least Concern	
LYCAENIDAE	<i>Aloeides depicta</i>	Depicta Russet	Least Concern	
LYCAENIDAE	<i>Aloeides pallida littoralis</i>	Giant Russet	Near Threatened	
LYCAENIDAE	<i>Aloeides pierus</i>	Veined Russet	Least Concern	
LYCAENIDAE	<i>Aloeides thyra orientis</i>	Red Russet	Endangered	
LYCAENIDAE	<i>Anthene definita definita</i>	Steel-blue Ciliate Blue	Least Concern	
LYCAENIDAE	<i>Brephidium metophis</i>	Tinktinkie Pygmy Blue	Least Concern	
LYCAENIDAE	<i>Cacyreus dicksoni</i>	Karoo Geranium Bronze	Least Concern	
LYCAENIDAE	<i>Cacyreus fracta fracta</i>	Water Geranium Bronze	Least Concern	
LYCAENIDAE	<i>Cacyreus lingeus</i>	Bush Bronze	Least Concern	
LYCAENIDAE	<i>Cacyreus marshalli</i>	Common geranium Bronze	Least Concern	
LYCAENIDAE	<i>Capys alpheus alpheus</i>	Orange-banded Protea	Least Concern	
LYCAENIDAE	<i>Chrysoritis brooksi tearei</i>	Angular Opal	Endangered	
LYCAENIDAE	<i>Chrysoritis chrysaor</i>	Burnished Opal	Least Concern	
LYCAENIDAE	<i>Chrysoritis felthami felthami</i>	Orange Opal	Least Concern	
LYCAENIDAE	<i>Chrysoritis pyroeis pyroeis</i>	Sand-dune Opal	Least Concern	
LYCAENIDAE	<i>Chrysoritis thysbe thysbe</i>	Thysbe Opal	Least Concern	
LYCAENIDAE	<i>Chrysoritis thysbe thysbe</i>	Thysbe Opal	Least Concern	
LYCAENIDAE	<i>Chrysoritis zeuxo zeuxo</i>	Jitterbug daisy Copper	Least Concern	
LYCAENIDAE	<i>Deudorix antalus</i>	Brown Playboy	Least Concern	
LYCAENIDAE	<i>Eicochrysops m. messapus</i>	Cupreous ash Blue	Least Concern	Yes
LYCAENIDAE	<i>Lampides boeticus</i>	Pea Blue	Least Concern	
LYCAENIDAE	<i>Lepidochrysops littoralis</i>	Coastal Giant Cupid	Endangered	
LYCAENIDAE	<i>Lepidochrysops robertsoni</i>	Robertson's Giant Cupid	Least Concern	
LYCAENIDAE	<i>Leptomyrina lara</i>	Cape Black-eye	Least Concern	
LYCAENIDAE	<i>Leptotes pirithous pirithous</i>	Common Zebra Blue	Least Concern	
LYCAENIDAE	<i>Oraidium barberae</i>	Dwarf Blue	Least Concern	
LYCAENIDAE	<i>Phasis thero thero</i>	Silver Arrowhead	Least Concern	
LYCAENIDAE	<i>Tarucus thespis</i>	Vivid Pierrot	Least Concern	
LYCAENIDAE	<i>Thestor claassensi</i>	Stilbaai Skolly	Vulnerable	
LYCAENIDAE	<i>Thestor rossouwi</i>	Coastal	Least Concern	
LYCAENIDAE	<i>Zizeeria knysna knysna</i>	African grass Blue	Least Concern	Yes
NYMPHALIDAE	<i>Cassionympha detecta</i>	Cape dull Brown	Least Concern	
NYMPHALIDAE	<i>Melampias huebneri huebneri</i>	Boland Brown	Least Concern	
NYMPHALIDAE	<i>Pseudonympha magus</i>	Silver-bottom Brown	Least Concern	Yes
NYMPHALIDAE	<i>Tarsocera cassus cassus</i>	Spring Widow	Least Concern	
NYMPHALIDAE	<i>Vanessa cardui</i>	Painted Lady	Least Concern	
PAPILIONIDAE	<i>Papilio d. demodocus</i>	Citrus Swallowtail	Least Concern	
PAPILIONIDAE	<i>Papilio nireus lyaeus</i>	Green-banded Swallowtail	Least Concern	
PIERIDAE	<i>Colias electo electo</i>	Meadow White	Least Concern	
PIERIDAE	<i>Dira clytus clytus</i>	Cape Autumn Widow	Least Concern	Yes
PIERIDAE	<i>Mylothris agathina agathina</i>	Eastern dotted Border	Least Concern	
PIERIDAE	<i>Nepheronia buquetii buquetii</i>	Buquet's Vagrant	Least Concern	Yes
PIERIDAE	<i>Pontia helice helice</i>	Southern meadow White	Least Concern	Yes

**TABLE 2**

SCC no.	1	2	3
Family	Lycaenidae	Lycaenidae	Lycaenidae
Common name	Knysna Giant Copper	Brenton Copper	Riversdale Opal
Scientific name	<i>Aloeides pallida littoralis</i>	<i>Aloeides thyra orientis</i>	<i>Chrysoritis brooksi tearei</i>
IUCN Red List category	NT	EN	EN
Habitat requirements (vegetation type codes as per SANBI, 2018)	Flat sandy open ground in coastal fynbos, altitude from 40 to 250m. Albertinia Sand Fynbos FFd 9 Blombos Strandveld FS 8	Flat sandy open ground in coastal fynbos, altitude from 40 to 250m. Albertinia Sand Fynbos FFd 9 Canca Limestone Fynbos FFI 3 Blombos Strandveld FS 8	Low, sandy hills and slopes sparsely covered by low shrubs. Canca Limestone Fynbos FFI 3 Albertina Sand Fynbos FFd 9
Probability of occurrence	Zero	Insignificant	Zero
Justification	Vegetation does not occur at site even though records of taxon occur not far from the site.	Vegetation is badly degraded at site, even though records of taxon occur not far from the site.	Vegetation is badly degraded at site, even though records of taxon occur not far from the site. Host plant not found at site.

SCC no.	4	5
Family	Lycaenidae	Lycaenidae
Common name	<i>Lepidochrysops littoralis</i>	<i>Thestor claassensi</i>
Scientific name	Coastal Blue	South Coast Skolly
IUCN Red List category	EN	VU
Habitat requirements (vegetation type codes as per Mucina & Rutherford, 2006)	Rocky limestone ridges or sand dunes in coastal fynbos, altitude up to 400m. Albertinia Sand Fynbos FFd 9 Canca Limestone Fynbos FFI 3	Gentle slopes and flat areas in limestone fynbos vegetation, with either a sandy or rocky substrate. Canca Limestone Fynbos FFI 3
Probability of occurrence	Zero	Zero
Justification	Vegetation is badly degraded at site, even though records of taxon occur not far from the site. Host plant not found at site.	Vegetation is badly degraded at site, even though records of taxon occur not far from the site.

## APPENDIX 1

### CREDENTIALS – DAVID ALAN EDGE

**Date of birth:** 22<sup>nd</sup> August 1943  
**Place of birth:** Ormskirk, Lancs., UK  
**Residence:** Brenton-on-Sea, Knysna, Western Cape

### QUALIFICATIONS

**1965** MA (Cantab) – Mechanical Engineering  
**2001** BSc (cum laude) – Zoology & Botany (UNISA)  
**2002** BSc (Hons) (cum laude) – Environmental Science (Potchefstroom University)  
Specialising in Biodiversity and Conservation biology  
**2006** PhD in Environmental Sciences – North-West University. Thesis entitled “The ecology and conservation of the Brenton Blue”

### ENGINEERING & MANAGEMENT CAREER

**1965 – 1993** **Nchanga Consolidated Copper Mines, Zambia**  
**Assistant Divisional Engineer**  
Maintenance engineering and management  
**1973-1979** **Palabora Mining Company**  
**Assistant General Manager**  
Operations and maintenance management, mechanical engineering and extractive metallurgy, general management  
**1979-1993** **LTA Process Engineering**  
**Managing Director**  
General management, marketing, project engineering and management, design engineering, procurement and construction management.

### LEPIDOPTERISTS’S SOCIETY OF AFRICA (LEPSOC AFRICA)

**1983** Founder member  
**1984–1986** Council member  
**1993–2016** Representative – Southern Cape  
**2008–2011** Treasurer  
**2011–2018** Editor – *Metamorphosis*, a scientific journal dedicated to the study of African Lepidoptera

### CONSERVATION ACTIVITIES

**1993–1996** Leading role-player in the campaign to save Brenton Blue  
**1995–2018** Brenton Blue Management Committee - member and leader of research programme  
**1999–2018** Knysna Environmental Forum - Co-chairman  
**2005–2018** Brenton Blue Trust – Trustee  
**2008–2013** South African Butterfly Conservation Assessment (SABCA)  
Digitised own collection of over 8000 specimens of South African butterflies. Project leader for the southern Cape – an area of 60 000 sq. km, supervising three other field workers. Field surveys yielded over 2500 new species–QDGS records. Editor of South African Butterfly Atlas, lead author for Chapters 3 and 4 (see publications below). Authored over 100 species accounts (out of 800)  
**2011–2018** Leader of the Conservation of Rare and Endangered Lepidoptera (COREL) programme for South Africa, including being “Custodian” for six species.  
**2015-2018** Project Director for the South African Lepidoptera Conservation Assessment (SALCA) project carried out for the South African Biodiversity Institute (SANBI)  
**2015-2018** Taxon Lead – Butterflies for the BioGaps project to establish the biological diversity of the ‘Shale Gas Fracking’ area of the Karoo  
**2015-2018** Project Coordinator of the “Butterfly Evolutionary Diversity” project to obtain DNA samples for all c. 800 South African butterfly species

### ENVIRONMENTAL CONSULTING

#### Dave Edge & Associates Environmental Consulting

1997 – 2001	Sparrebosch, Knysna	Detailed butterfly surveys for EIA and monitoring
2000 – 2004	Roodefontein, Plettenberg Bay	Butterfly surveys for scoping report and EIA
2001	Pezula Estate, Knysna	Preliminary assessment of butterfly potential
2001	The Cove, Knysna	Preliminary assessment of butterfly potential
2001 – 2003	Fernwood, Knysna	Butterfly surveys for scoping report and EIA

2003 – 2004	The Lakes, Sedgefield	Butterfly survey for scoping report and EIA
2004 – 2005	Lagoon Bay, Glentana	Butterfly survey for scoping report and EIA
2004 – 2006	Paradise Coast, Mossel Bay	Butterfly survey for scoping report and EIA
2004 – 2005	Pezula@Hunters, Knysna	Butterfly survey for scoping report and EIA
2004 – 2006	Uitzicht 216-176, Knysna	Butterfly survey for scoping report and EIA
2004 – 2008	Pierpoint Nature Estate, Knysna	Butterfly survey for scoping report and EIA
2005 – 2006	Erf 4016 Eastford, Knysna	Butterfly survey for scoping report
2006 – 2007	Stilbaai Farm 485/51	Butterfly survey for scoping report
2006 – 2008	Destiny Africa, George	Butterfly survey for scoping report
2008	Escom, Nuclear Power Stations	Preliminary assessment of butterfly potential
2009	Pierpoint Nature Estate, Knysna	Research programme to establish ecology of <i>A. almeida</i>
2009 – 2010	Escom, Nuclear Power Stations	Detailed butterfly surveys (3 power station sites)
2011 – 2012	Uitzicht 216-77, Brenton	Biodiversity survey for scoping report
2012	Green View Estate, Mossel Bay	Butterfly survey for scoping report
2015	Zeelandsnek, Oudtshoorn	Butterfly survey for scoping report
2015 – 2018	Mossel Bay Cemetery project	Butterfly survey for scoping report; monitoring programme
2016	Schaapkraal, Cape Town	Butterfly scoping and sensitivity report
2016 – 2019	Entabeni Estate, Knysna	Management plan for butterfly reserve
2016 – 2019	Uitzicht 216-71 & 72, Brenton	EIA for development proposal
2017 – 2019	Hartenbosheuwels	Butterfly scoping study
2019	Abalone Hatchery, Gouritsmond	Desk top study – butterflies
2019	Lamloch Safari Park, Kleinmond	Butterfly survey
2019	Village-on-Sea, Mossel Bay	Butterfly survey
2019	Mossel Bay Golf Estate	Butterfly survey
2019	Garden Route Dam, George	Preliminary butterfly survey for scoping report
2020	Drakenzicht, Paarl	Terrestrial biodiversity compliance statement – butterflies
2020	Rouen Farm, Gordon's Bay	Terrestrial biodiversity compliance statement – butterflies
2020	Still Bay Cemetery	Terrestrial biodiversity sensitivity – butterflies
2020-2021	Nuweveld Wind Farm, W Cape	Desk top study of potential impact on butterflies
2020-2021	Nuweveld Wind Farm, W Cape	Butterfly survey to determine occurrence of ERT butterflies
2020-2021	Kokerboom Wind Farm, N Cape	Desk top study of potential impact on butterflies
2020-2021	Villa Billion Project, Kuils River	Terrestrial biodiversity compliance statement – butterflies
2021	Erf 4016, Knysna	Environmental impact assessment – butterflies
2021	Impofu Grid Extension, E Cape	Butterfly sensitivity study; habitat modelling
2021	Belhar Project, Cape Town	Terrestrial biodiversity sensitivity – butterflies
2021	Hoogland Wind Farm, W. Cape	Desk top study of potential impact on butterflies
2021	Still Bay West Erf 485-82 & 92	Desk top study and site survey – butterflies
2021	Aalwyndal Erf 21275, Mossel Bay	Desk top study and site survey – butterflies
2021	Still Bay East Erf 1692	Desk top study and site survey – butterflies
2021	Hoogland Wind Farm, W. Cape	Butterfly survey to determine occurrence of ERT butterflies
2021	Zandberg Sand Mine Expansion	Desk top study and site survey – butterflies
2021	Aalwyndal Erven 21238 & 9	Desk top study and site survey – butterflies

## ACADEMIC CAREER

<b>2009–2014</b>	<b>North-West University (Potchefstroom)</b> <b>Senior Lecturer</b> Developed new post graduate teaching module for “Conservation Ecology” Lectured to postgraduate (honours and masters) students on Conservation Ecology; including setting and marking assignments and examination papers.
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## AWARDS

<b>1998</b>	The Habitat Council "for outstanding achievements in the field of environmental conservation and management – for his role in helping to secure the habitat of the endangered Brenton Blue butterfly"
<b>2003</b>	LepSoc Africa – June 2003 – Chairman's Award “for the most significant contribution to African Lepidoptera conservation for the period July 2002 – June 2003”
<b>2013</b>	LepSoc Africa – October 2013 – President's Award “for his passion and commitment leading the development and completion of the new <i>e-Metamorphosis</i> web journal.
<b>2015</b>	LepSoc Africa – August 2015 – Honorary Life Membership.
<b>2018</b>	LepSoc Africa – September 2018 – President's Award “in acknowledgement of his tireless work and commitment to the Lepidopterists' Society of Africa”.

## PUBLICATIONS IN SCIENTIFIC JOURNALS & BOOKS (40 articles)

<b>EDGE, D.A.</b>	1982. Re-discovery of <i>Erikssonia acraeina</i> Trimen. <i>Rostrum</i> , <b>1</b> (2): 2
<b>EDGE, D.A.</b>	1985. Life history of <i>Iolais diametra natalica</i> Vári. <i>Metamorphosis</i> , <b>1</b> (13): 4–6
<b>EDGE, D.A.</b>	1987. Life history of <i>Iolais pallene</i> (Wallengren). <i>Metamorphosis</i> , <b>1</b> (19): 3–5
<b>EDGE, D.A.</b>	1990. Life history - <i>Aphnaeus hutchinsonii</i> Trimen 1887. <i>Metamorphosis</i> , <b>1</b> (27): 16–18
<b>EDGE, D.A. &amp; PRINGLE, E.L.</b>	1996. Notes on the natural history of the Brenton Blue <i>Orachrysops niobe</i>

- (Trimen) (Lepidoptera: Lycaenidae). *Metamorphosis* **7**(3): 109–120
- EDGE, D.A.** 2002. Some ecological factors influencing the breeding success of the Brenton Blue *Orachrysops niobe* (Trimen) (Lepidoptera: Lycaenidae). *Koedoe* **45**(2): 19–34
- EDGE, D.A.** 2005a. Butterfly conservation in the southern Cape. *Metamorphosis* **16**(2): 28–46
- EDGE, D.A.** 2005b. Ecological factors influencing the survival of the Brenton Blue butterfly, *Orachrysops niobe* (Trimen) (Lepidoptera: Lycaenidae). Potchefstroom: North-West University. (Thesis–D.Phil.)
- EDGE, D.A.** 2005c. Life history and ecological observations on *Aloeides pallida*, undescribed subspecies (Lepidoptera: Lycaenidae). *Metamorphosis* **16**(4): 110–115
- EDGE, D.A.** & WILLIAMS, M.C. 2005. Observations on the life history of *Lepidochrysops balli* Dickson (Lepidoptera: Lycaenidae). *Metamorphosis* **16**(4): 106–109
- EDGE, D.A.** & PRINGLE, E.L. 2006. Observations on the life history of *Chrysoritis braueri* (Pennington) (Lepidoptera: Lycaenidae). *Metamorphosis* **17**(4): 134–139
- EDGE, D.A.** 2007. The Brenton Blue – tiny icon for biodiversity. *Vision – Endangered Wildlife Trust 15<sup>th</sup> Annual*. Future Publishing, Rivonia.
- TERBLANCHE, R.F. & **EDGE, D.A.** 2007. The first record of an *Orachrysops* in Gauteng. *Metamorphosis* **18**(4): 131–141
- EDGE, D.A.** 2008a. Adult behaviour of *Orachrysops niobe* (Trimen) (Lepidoptera: Lycaenidae). *Metamorphosis* **19**(3): 116–126.
- EDGE, D.A.** 2008b. Environmental management plan: Brenton Blue butterfly special nature reserve: Revision 2 (unpublished). CapeNature document. 43 pp.
- EDGE, D.A.**, CILLIERS, S.S. & TERBLANCHE, R.F. 2008. Vegetation associated with the Brenton Blue butterfly. *South African Journal of Science* **104**(11/12): 505–510.
- EDGE, D.A.**, ROBERTSON, H.G. & VAN HAMBURG, H. 2008. Ant assemblages at potential breeding sites for the Brenton Blue butterfly *Orachrysops niobe* (Trimen) (Lepidoptera: Lycaenidae). *African Entomology* **16**(2): 253–262.
- EDGE, D.A.** & VAN HAMBURG, H. 2009. Larval feeding behaviour and myrmecophily of the Brenton Blue butterfly *Orachrysops niobe* (Trimen). *Journal of Research on the Lepidoptera* **42**: 21–33.
- EDGE, D.A.** 2011a. The Brenton Blue butterfly – twenty years of conservation. *Environment* **6**: 34–35.
- EDGE, D.A.** 2011b. Custodians of rare and endangered Lepidoptera (COREL). *Metamorphosis* **22**(3): 81–96.
- EDGE, D.A.** & TERBLANCHE, R.F. 2011. A rapid assessment protocol for surveying and monitoring diurnal Lepidoptera in Africa. *Metamorphosis* **22**(3): 75–80.
- EDGE, D.A.**, TERBLANCHE, R.F., HENNING, G.A., MECENERO, S. and NAVARRO, R. 2013. Butterfly conservation in South Africa: Analysis of the Red List and threats. In: *Conservation assessment of butterflies of South Africa, Lesotho and Swaziland: Red list and atlas*. Safronics (Pty) Ltd., Johannesburg and Animal Demography Unit, Cape Town. pp. 13–33.
- EDGE, D.A.**, WOODHALL, S.E., BALL, J.B., HENNING, G.A., ARMSTRONG, A.J. and MECENERO, S. 2013. Future priorities for butterfly conservation and research. In: *Conservation assessment of butterflies of South Africa, Lesotho and Swaziland: Red list and atlas*. Safronics (Pty) Ltd., Johannesburg and Animal Demography Unit, Cape Town. pp. 36–40.
- EDGE, D.A.** 2013. Family Lycaenidae Leach, 1815. In: *Conservation assessment of butterflies of South Africa, Lesotho and Swaziland: Red list and atlas*. Safronics (Pty) Ltd., Johannesburg and Animal Demography Unit, Cape Town. pp. 335–610.
- MECENERO, S., BALL, J.B., **EDGE, D.A.**, HAMER, M.L., HENNING, G.A., KRÜGER, M., PRINGLE, E.L., TERBLANCHE, R.F., and WILLIAMS M.C. (eds). 2013. *Conservation assessment of butterflies of South Africa, Lesotho and Swaziland: Red list and atlas*. Safronics (Pty) Ltd., Johannesburg and Animal Demography Unit, Cape Town.
- MECENERO, S., NAVARRO, R., COETZER, B. and **EDGE, D.A.** 2013. Description of data and methods. In: *Conservation assessment of butterflies of South Africa, Lesotho and Swaziland: Red list and atlas*. Safronics (Pty) Ltd., Johannesburg and Animal Demography Unit, Cape Town. pp. 3–11.
- EDGE, D.A.** 2014. Searching in the Waterberg for *Erikssonia edgei* Gardiner & Terblanche, 2010 during December 2011 & January 2012. *Metamorphosis* **25**: 77–81.
- GARVIE, O.G., DOBSON, J., **EDGE, D.A.**, GARDINER, A.J., TERBLANCHE, R.F. & WILLIAMS, M.C. (2014). Research and conservation plan for the Waterberg Copper (*Erikssonia edgei* Gardiner & Terblanche, 2010) (Lepidoptera: Lycaenidae) at the Bateleur Nature Reserve
- BAZIN, E.A. & **EDGE, D.A.** 2015. The ecology and conservation of *Thestor brachycerus brachycerus* (Trimen, 1883) – an aphytophagous miletine butterfly from South Africa. *Journal of Insect Conservation* **19**(2): 349–357.
- EDGE, D.A.** & MECENERO, S. 2015. Butterfly conservation in southern Africa. *Journal of Insect Conservation* **19**(2): 325–339.
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- WILLIS, C.K. & **EDGE, D.A.** 2015. Oviposition and mating behaviour in *Orachrysops warreni* G.A. & S.F. Henning, 1994 (Lepidoptera: Lycaenidae: Polyommatainae), in Mpumalanga, South Africa. *Metamorphosis* **26**: 1–3.
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