



# A list of spider species found in the Addo Elephant National Park, Eastern Cape province, South Africa

Checklist

CrossMark

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The knowledge of spiders in the Eastern Cape province lags behind that of most other South African provinces. The Eastern Cape province is renowned for its conservation areas, as the largest part of the Albany Centre of Endemism falls within this province. This article provides a checklist for the spider fauna of the Addo Elephant National Park, one of the most prominent conservation areas of the Eastern Cape, to detail the species found in the park and determine their conservation status and level of endemicity based on their known distribution. Various collecting methods were used to sample spiders between 1974 and 2016. Forty-seven families that include 184 genera and 276 species were recorded. Thomisidae (39 spp.), Araneidae (39 spp.), Salticidae (35 spp.) and Theridiidae (25 spp.) were the most species-rich families, while 14 families were only represented by a single species.

**Conservation implications:** A total of 12.7% of the South African spider fauna and 32.9% of the Eastern Cape fauna are protected in the park; 26.4% are South African endemics, and of these, 3.6% are Eastern Cape endemics. Approximately, 4% of the species are possibly new to science, and 240 species are recorded from the park for the first time.

Keywords: Arachnida; conservation; endemism; biome; records.

#### Introduction

One of the core research areas of the South African National Survey of Arachnida (SANSA) is to determine the number of arachnid species presently conserved in protected areas, including the South African National Parks (SANParks) (Dippenaar-Schoeman & Haddad 2006; Dippenaar-Schoeman 2016). The species distribution data generated through SANParks and other surveys feeds into the conservation assessments used to compile the Red Data List of the Arachnida of South Africa (Lyle & Dippenaar-Schoeman 2015).

Compared to some of the better surveyed provinces of South Africa, for example, KwaZulu-Natal and Limpopo, the Eastern Cape has received far less attention, but harbours relatively more endemic taxa than the Limpopo province, particularly as a function of its size (Foord et al. 2011). This serves as a possible indicator of the unique spider assemblages of the region. Although the Addo Elephant National Park (AENP) is the largest national park in the Eastern Cape and the third largest national park in South Africa, no documented surveys of spiders exist for this protected area.

Work in the province has largely been limited to the Mountain Zebra National Park, the first national park for which a spider species list was published (Dippenaar-Schoeman 1988, 2006), and a study on the subsocial eresid *Stegodyphus tentoriicola* Purcell, 1904 (Ruch et al. 2009a, 2009b, 2012). Further work in the Eastern Cape includes aspects of the spider fauna in the Mkambati Nature Reserve (Dippenaar-Schoeman, Hamer & Haddad 2011; Hamer & Slotow 2017) and the Silaka Nature Reserve (Forbanka & Niba 2013), while surveys in the Asante Sana Nature Reserve were the focus of a doctoral study on epigaeic invertebrates (Midgley 2012).

The only records of spiders from the AENP (30 spp.) were included in the First Atlas of South African Spiders (Dippenaar-Schoeman et al. 2010), and six species have been referred to in taxonomic papers in the past (Dippenaar-Schoeman 1980; Jocqué 1984; Lyle & Haddad 2018; Wesołowska & Haddad 2013, 2018). Here, we document all spider species recorded from the AENP over the last 50 years, with efforts being concentrated over the last decade. Information is provided on the global distribution, endemicity and conservation status of each species.

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## Research method and design Study area and period

The AENP is situated in the Sundays River region, between the city of Port Elizabeth and the town of Makhanda (Grahamstown) (Figure 1). Although originally proclaimed in 1931 to protect one of the four elephant populations that survived the start of the 20th century in South Africa, it is very significant in the conservation of the Albany thicket, which is predominantly found in the Eastern Cape (Johnson, Cowling & Phillipson 1999) and is the dominant biome of the region (Mucina & Rutherford 2006). The Woody Cape Nature Reserve and some portions of privately owned land were recently added to the park, bringing its total area to approximately 179 000 hectares (SANParks 2015).

Rainfall in the park is mainly concentrated in spring and autumn, varying between 350 mm and 900 mm per annum, depending on topography and biomes (SANParks 2015). The region seldom experiences temperatures below 0 °C, while summer extremes of 45 °C are quite common (Lombard et al. 2001).

#### Sampling methods and identification

The first spider survey in the AENP took place in 1974, when the members of the Agricultural Research Council (ARC) – Plant Protection Research Institute (PPRI) (now ARC – Plant Health and Protection) sampled there. In 2009, a second survey was undertaken by the members of the ARC-PPRI. Between these events, there was occasional collecting by various museum researchers and members of the public who deposited specimens in several museums in South Africa and internationally. In 2010, more regular sampling started in the park after a formal research

agreement was established between SANSA and SANParks, to stimulate more intensive spider sampling in the national parks. As a result, more regular sampling was undertaken in five different parts of the park (Figure 2), which included the semi-arid Sundays River succulent thicket around the Darlington Dam; the fynbos and Afromontane forests of the Zuurberg Mountains; the subtropical thickets in the Kabouga area just north of Kirkwood; the Alexandria coastal forest and dune thickets of the Woody Cape area; and the Albany thickets of the main camp in the Sundays River Valley (Figure 2).

Conventional sampling techniques, as described by Dippenaar-Schoeman et al. (2015), were used. This included sweepnet sampling, beating, leaf-litter sifting and active searches during the day and night. Sampling did not follow a standardised protocol but was undertaken sporadically and ad hoc, depending on locality and time constraints. Voucher specimens were predominantly deposited in the National Collection of Arachnida (NCA) at the ARC–Plant Health and Protection in Pretoria. Taxonomic constraints, juveniles and undescribed species necessitated the use of morphospecies in some instances (Appendix 1).

#### **Endemicity value and conservation status**

A detailed explanation of the indices to assess the endemicity value and conservation status of each species can be found at the end of Appendix 1, but it distinguishes between species only known from the type locality (6), the Eastern Cape (5), two adjoining provinces (4), South Africa (3), Southern Africa (2), Afrotropical Region (1) and finally areas outside the Afrotropical Region (0). The conservation status was derived from a recent National Red List assessment of spiders in South Africa.

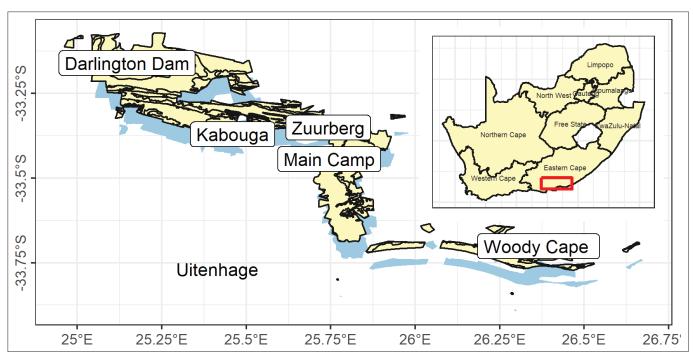


FIGURE 1: Map of South Africa, showing the locality of the Addo Elephant National Park in the Eastern Cape province (inset) and the different sites where spiders were collected.

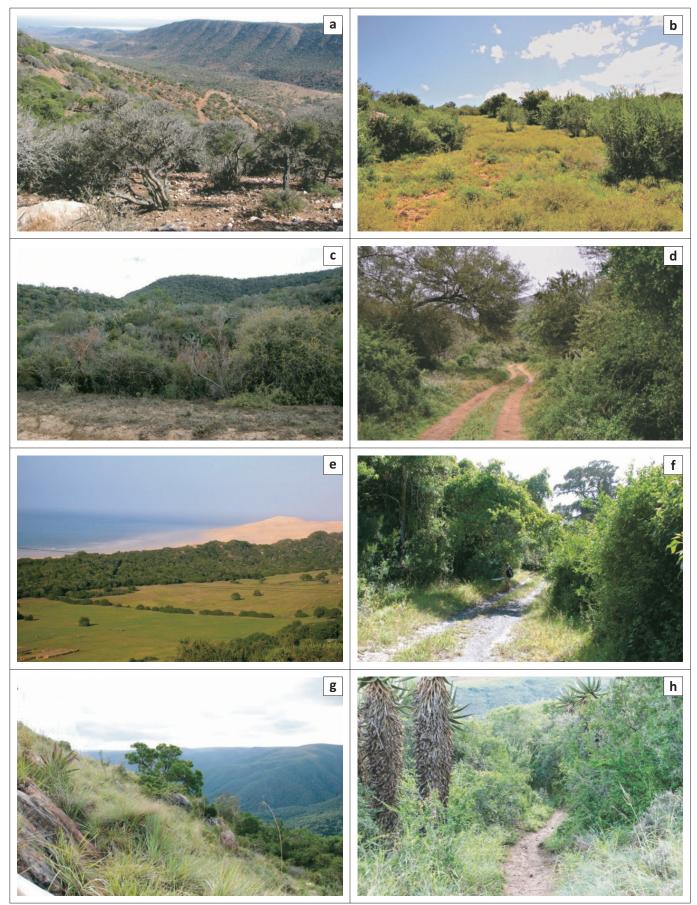


FIGURE 2: Habitat types in the Addo Elephant National Park: (a) Darlington Dam (Succulent Karoo thicket); (b) Main Camp (Albany thickets); (c) and (d) Kabouga (subtropical thicket); (e) and (f) Woody Cape (coastal forest and dune thicket); (g) and (h) Zuurberg (fynbos and Afromontane forest).

#### **Ethical considerations**

This research followed all ethical standards for research without direct contact with human or animal subjects.

#### Results and discussion

#### **Numbers** present

In total, 276 species in 184 genera and 47 families were recorded (Table 1; Appendix 1). Seven species are probably new and 16 species are undetermined, because of the lack of resolved taxonomy of their genera (Appendix 1). Possible new species belong to large families that require comprehensive revision to determine the taxonomic status and identity of these taxa.

#### Family diversity

Of the 47 spider families collected from AENP (Table 1; Appendix 1), the Thomisidae and Araneidae with 39 spp. are the most species-rich, followed by the Salticidae (35 spp.) and Theridiidae (25 spp.). For comparison, at the Mkambati Nature Reserve, the Theridiidae and Araneidae were the most species-rich families (Dippenaar-Schoeman et al. 2011), and at the Mountain Zebra National Park, it was the Thomisidae (Dippenaar-Schoeman 1988, 2006).

Thomisidae: Thomisids are mainly plant dwellers and are easily dispersed by wind. Consequently, most species have a wide distribution. Only five species were previously reported from AENP in the Spider Atlas (Dippenaar-Schoeman et al. 2010); therefore, 34 spp. are newly recorded from the park. Twenty-one species have a wide distribution throughout Africa, while four species are also known from Europe and nine occur throughout southern Africa. Four species are South African endemics, with two -Holopelus almiae Dippenaar-Schoeman, 1986 and Mystaria lindaicapensis Lewis & Dippenaar-Schoeman, 2014 (Figure 31) – being near endemics of the Eastern Cape. Both species are also known from the Western Cape. The species listed as Monaeses sp. 2 is new to science, and the same species was also recorded at the Mkambati Nature Reserve (Dippenaar-Schoeman et al. 2011). Diaea dorsata (Fabricius, 1777) (Figure 3k) is known from Europe to Japan (World Spider Catalog 2019) and is reported from South Africa for the first time.

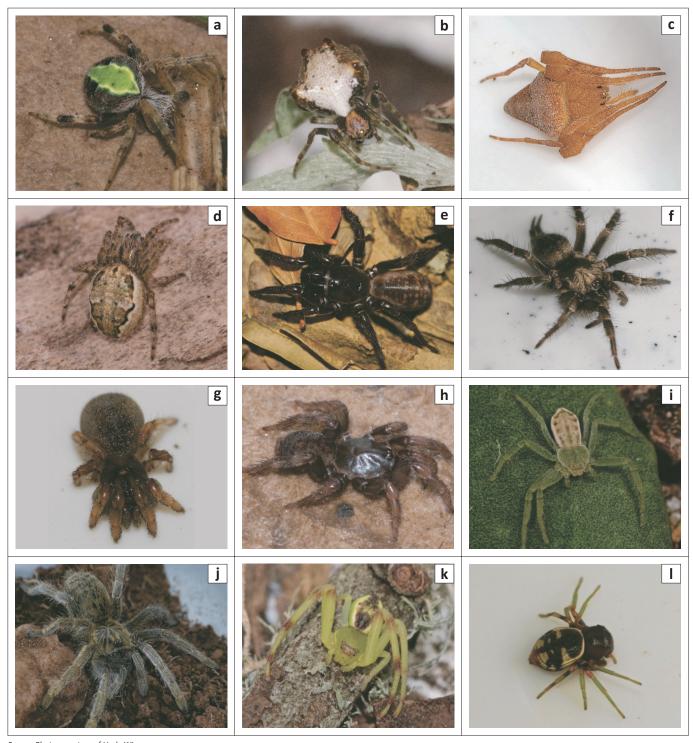
Araneidae: The Araneidae are web builders and produce typical orb webs. Of the 39 species recorded, only four were previously known from the park (Dippenaar-Schoeman et al. 2010). Twenty of the species have a wide African distribution, three species are endemic to southern Africa, and only three are South African endemics that include *Ideocaira transversa* Simon, 1903 (Figure 3c), *Nemoscolus elongatus* Lawrence, 1947 and *Ursa turbinata* Simon, 1895. Three genera, *Acanthepeira*, *Larinioides* and *Zygiella* (Figure 3d), represented by undetermined species, are newly recorded for South Africa, as well as the species *Araneus detrimentosus* (O. Pickard-Cambridge, 1889) (Figure 3a) and *Chorizopesoides orientalis* 

**TABLE 1:** Spider diversity of the Addo Elephant National Park, with the total number of families, genera and species sampled.

No.	Family	Genera	Species
1	Agelenidae	3	3
2	Amaurobiidae	3	3
3	Ammoxenidae	1	1
4	Araneidae	25	39
5	Caponiidae	1	1
6	Cheiracanthiidae	2	5
7	Clubionidae	1	5
8	Corinnidae	2	2
9	Ctenidae	2	2
10	Cyatholipidae	2	2
11	Cyrtaucheniidae	1	1
12	Deinopidae	1	1
13	Dictynidae	3	3
14	Dipluridae	1	1
15	Eresidae	3	3
16	Gnaphosidae	5	7
17	Hahniidae	1	1
18	Idiopidae	1	1
19	Linyphiidae	5	5
20	Liocranidae	2	2
21	Lycosidae	8	9
22	Migidae	1	1
23	Mimetidae	2	2
24	Nemesiidae	2	2
25	Oecobiidae	1	1
26	Oonopidae	1	1
27	Oxyopidae	3	10
28	Palpimanidae	1	1
29	Philodromidae	6	8
30	Pholcidae	2	3
31	Phyxelididae	1	2
32	Pisauridae	6	8
33	Salticidae	19	35
34	Scytodidae	1	3
35	Segestriidae	1	1
			2
36	Selenopidae	1	
37	Sicariidae	2	1 2
38	Sparassidae		6
39	Tetragnathidae	3	
40	Theraphosidae	2	2
41	Theridiidae	15	25
42	Thomisidae	21	39
43	Trachelidae	4	5
44	Trochanteriidae	1	1
45	Uloboridae	4	6
46	Zodariidae	8	10
47	Zoropsidae	2	2
Total	-	184	276

(Simon, 1909). Species of six genera could not be determined (e.g. Figure 3b) and might represent new records.

**Salticidae:** The Salticidae are free-living spiders found on vegetation and the soil surface. Only *Cyrba nigrimana* Simon, 1900 (Dippenaar-Schoeman et al. 2010), *Heliophanus* (*Heliophanus*) gramineus Wesołowska & Haddad, 2013, *Massagris mirifica* Peckham & Peckham, 1903 (Wesołowska & Haddad 2018) and *Pseudicius maculatus* Haddad & Wesołowska, 2011 (Wesołowska & Haddad 2013) were previously recorded from the park. Eighteen species are widely



Source: Photos courtesy of Linda Wiese

FIGURE 3: Selected spiders of the Addo Elephant National Park: (a) Araneus detrimentosus (O. Pickard-Cambridge, 1889) (Araneidae); (b) Undescribed Cyclosa sp. (Araneidae); (c) Ideocaira transversa Simon, 1903 (Araneidae); (d) Zygiella sp. (Araneidae); (e) Ancylotrypa cornuta Purcell, 1904 (Cyrtaucheniidae); (f) Allothele australis (Purcell, 1903) (Dipluridae); (g) Moggridgea rupicoloides Hewitt, 1914 (Migidae); (h) Hermacha grahami (Hewitt, 1915) (Nemesiidae); (i) New genus (Philodromidae); (j) Harpactirella magna Purcell, 1903 (Theraphosidae); (k) Diaea dorsata (Fabricius, 1777) (Thomisidae); (l) Mystaria lindaicapensis Lewis & Dippenaar-Schoeman, 2014 (Thomisidae).

known throughout Africa, and one, *Menemerus bivittatus* (Dufour, 1831), has a pantropical distribution. Six species are endemic to southern Africa, and 10 species are South African endemics; five species are near endemic to the Eastern Cape. Only one *Tanzania* species is possibly new to science.

**Theridiidae:** The theridiids construct different types of webs known as cobwebs or gumfoot webs. No theridiids were

previously reported from the park. Unfortunately, the taxonomy of most theridiid genera in Africa is still unresolved. Seven species (28%) could not be identified to species level. This corresponds with the Mkambati Nature Reserve where 67% of the species were unresolved (Dippenaar-Schoeman et al. 2011). Eight species have a wide global distribution and five species are South African endemics, with only one species (*Phoroncidia capensis* [Simon, 1895]) being endemic to

**TABLE 2:** Conservation status and endemicity of the spider species sampled at the Addo Elephant National Park.

Distribution	Number of species	Code	%
Conservation status			
Data deficient (taxonomic reason or lack distribution data)	17	DD	6.2
Not evaluated (immature, new or undetermined)	31	NE	11.2
Least concern	227	LC	82.2
Vulnerable	1	VU	0.4
Endemicity			
0 – Africa and wider (C)	25	LC	9.1
1 – Africa endemics (AE)	97	LC	35.1
2 – Southern Africa endemics (STHE)	50	LC	18.1
3 – South Africa endemics (SAE): more than three provinces	40	LC	14.5
4 – South Africa endemics (SAE): two adjacent provinces	23	LC/rare	8.3
5 – Eastern Cape endemics (ECE)	10	DD/rare	3.6
6 – Addo Elephant National Park (AENPE)	0	Rare	0.0

DD, data deficient; LC, least concern; NE, not evaluated; VU, vulnerable.

the Eastern Cape. Some of the undetermined species might be new to science.

#### Species endemicity and conservation status

Of the 276 species sampled, 17 spp. (6.2%) are data deficient (DD) and lack taxonomic or distribution data, while 31 spp. (11.2%) were not evaluated (NE) (Table 2; Appendix 1). The majority of the species (227 spp., 82.2%) sampled are listed as least concern (LC). Ninety-seven of the species (35.1%) are found throughout Africa, while 50 species (18.1%) are endemic to southern Africa. One species, *Mystaria lindaicapensis*, is considered to be vulnerable, because of its restricted distribution in the Eastern and Western Cape provinces (Table 3).

Of the species identified to species level, only 73 spp. (26.4%) are South African endemics (Table 2; Appendix 1). There are presently no endemic species known only from the AENP, but 10 species from eight families are Eastern Cape endemics (ECE) and a further species is near endemic. These species are of special concern because of their small distribution ranges (Table 3), and need more sampling and/ or taxonomic study to improve knowledge of their distributions. The 10 ECE are listed as data deficient, of which only Ancylotrypa cornuta Purcell, 1904 (Figure 3e) is known from both sexes. The VU near-endemic species, M. lindaicapensis, is only known from three south coast localities, including AENP. The ECE species include three trapdoor spider species (A. cornuta, Figure 3e; Hermacha grahami [Hewitt, 1915], Figure 2e; Moggridgea rupicoloides Hewitt, 1914, Figure 3g) and two baboon spider species (Harpactira curvipes Pocock, 1897; Harpactirella magna Purcell, 1903, Figure 3j).

Twenty-five of the AENP spiders have a wide global distribution (Table 2; Appendix 1), and most of them have been recorded from several continents (World Spider Catalog 2019). Some of these species listed from AENP have not been recorded from South Africa before, including

**TABLE 3:** Species of special concern recorded from the Addo Elephant National

Species	CS	Taxonomic information
Cyrtaucheniidae		
Ancylotrypa cornuta Purcell, 1904	DD	Both sexes; restricted distribution (3 loc.); not revised
Gnaphosidae		
Xerophaeus crustosus Purcell, 1907	DD	One sex; restricted distribution (3 loc.); not revised
Migidae		
Moggridgea rupicoloides Hewitt, 1914	DD	One sex; restricted distribution (4 loc.); revised (Griswold 1987)
Nemesiidae		
Hermacha grahami (Hewitt, 1915)	DD	One sex; restricted distribution (2 loc.); not revised
Pholcidae		
Spermophora pembai Huber, 2003	DD	One sex; restricted distribution (2 loc.); revised (Huber 2003)
Selenopidae		
Anyphops schoenlandi (Pocock, 1902)	DD	One sex; restricted distribution (4 loc.); revised (Benoit 1968)
Sparassidae		
Olios schonlandi (Pocock, 1900)	DD	One sex; restricted distribution (3 loc.); not revised
Theraphosidae		
Harpactira curvipes Pocock, 1897	DD	One sex; restricted distribution (2 loc.); not revised
Harpactirella magna Purcell, 1903	DD	One sex; restricted distribution (2 loc.); not revised
Theridiidae		
Phoroncidia capensis (Simon, 1895)	DD	One sex; restricted distribution (2 loc.); not revised
Thomisidae		
Mystaria lindaicapensis Lewis & Dippenaar-Schoeman, 2014	VU	Both sexes; restricted distribution (3 loc.); revised (Lewis & Dippenaar Schoeman 2014)

CS, conservation status; DD, data deficient; VU, vulnerable

Araneus detrimentosus, Chorizopesoides orientalis and Diaea dorsata.

#### **Conclusion**

A total of 240 species have been newly recorded from the AENP, bringing the total number of species known from the park to 276. All these new data have been made available for the Spider Red Listing project. The AENP spider fauna represents 12.7% of South African species and 32.9% of Eastern Cape species, of which 10 species are ECE that are of special concern and need additional collecting.

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#### **Competing interests**

The authors declare that they have no financial or personal relationships that may have inappropriately influenced them in writing this article.

#### Authors' contributions

All the authors are team members of SANSA and contributed towards planning this national survey. L.W. participated in fieldwork, while the rest of the authors assisted in the identification of specimens and the preparation and editing of the manuscript.

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#### Data availability statement

All specimens sampled in this study were deposited in the National Collection of Arachnida (NCA) at the ARC – Plant Health and Protection in Pretoria, South Africa. The specimen data are available from the NCA and SANSA databases on request.

#### Disclaimer

The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of any affiliated agency of the authors.

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Appendix starts on the next page  $\rightarrow$ 

### Appendix 1

 TABLE 1-A1: Spiders of the Addo Elephant National Park, listing their endemicity, conservation status, distribution and areas sampled in the park.

Species	END	CS	DIS	WC	KA	DA	MC	ZB
Agelenidae								
Agelena gaerdesi Roewer, 1955	2	LC	STHE	-	-	-	-	-
Benoitia ocellata (Pocock, 1900)	1	LC	AE	1	1	1	1	-
Mistaria leucopyga (Pavesi, 1883)	1	LC	AE	-	-	-	-	-
Amaurobiidae								
Chresiona invalida (Simon, 1898)	3	LC	SAE	1	-	1	-	-
Chumma inquieta Jocqué, 2001	4	DD	SAE	1	1	-	-	-
Pseudauximus sp. 1 (undetermined)	-	NE	-	-	-	-	1	-
Ammoxenidae								
Ammoxenus pentheri Simon, 1896†	2	LC	STHE	-	-	-	1	-
Araneidae								
Acanthepeira sp. (undetermined)	-	NE	-	1	-	-	-	-
Araneus apricus (Karsch, 1884)	1	LC	AE	1	-	-	-	-
Araneus detrimentosus (O. Pickard-Cambridge, 1889)	0	LC	С	1	-	-	-	-
Araneus holzapfelae Lessert, 1936	1	LC	AE	-	1	-	-	1
Araneus nigroquadratus Lawrence, 1937	2	LC	STHE	1	-	-	1	-
Araneus sp. 1 (undetermined)	-	NE	-	1	-	1	1	1
Araneus sp. 2 (undetermined)	-	NE	-	-	1	1	-	1
Argiope australis (Walckenaer, 1805)	1	LC	AE	-	-	1	-	1
Caerostris sexcuspidata (Fabricius, 1793)	1	LC	AE	1	1	-	1	1
Chorizopesoides cf. orientalis (Simon, 1909)	0	LC	С	1	-	-	-	-
Cyclosa insulana (Costa, 1834)†	0	LC	С	1	1	1	1	1
Cyphalonotus larvatus (Simon, 1881)	1	LC	AE	1	-	1	1	-
Cyrtophora citricola (Forsskål, 1775)	0	LC	С	1	-	-	1	1
Gasteracantha sanguinolenta C.L. Koch, 1844†	1	LC	AE	1	-	-	-	-
Gea infuscata Tullgren, 1910	1	LC	AE	1	-	-	-	-
Hypsosinga pygmaea (Sundevall, 1831)	0	LC	С	-	-	-	-	1
Ideocaira transversa Simon, 1903	3	LC	SAE	-	-	-	1	_
Isoxya tabulata (Thorell, 1859)	1	LC	AE	-	-	-	1	_
Larinia chloris (Audouin, 1826)	0	LC	С	-	-	-	-	1
Larinioides sp. (undetermined)	-	NE	-	1	-	1	-	1
Nemoscolus elongatus Lawrence, 1947	3	LC	SAE	1		-	-	-
Nemoscolus vigintipunctatus Simon, 1897	2	LC	STHE	-	-	1	-	_
Neoscona alberti (Strand, 1913)	1	LC	AE	-	-	-	-	1
Neoscona blondeli (Simon, 1885)	1	LC	AE	1		-	-	1
Neoscona hirta (C.L. Koch, 1844)	1	LC	AE	1	_	_	-	_
Neoscona penicillipes (Karsch, 1879)	1	LC	AE	1	_	_	-	_
Neoscona rufipalpis (Lucas, 1858)	1	LC	AE	1	_	_	-	_
Neoscona subfusca (C.L. Koch, 1837)†	1	LC	AE	1	_	1	1	1
Neoscona theisi theisiella (Tullgren, 1910)	1	LC	AE	1	_	1	_	_
Neoscona triangula (Keyserling, 1864)†	1	LC	AE	-	_	-	_	1
Pararaneus perforatus (Thorell, 1899)	1	LC	AE	1	_	_	_	1
Paraplectana thorntoni (Blackwall, 1865)	1	LC	AE	1		_	_	_
Poltys sp. (new)	-	NE	-	-	_	_	1	_
Prasonica seriata Simon, 1895	1	LC	AE				-	
Trichonephila fenestrata (Thorell, 1859)	2	LC	STHE	1		1		
Ursa turbinata Simon, 1895	3	LC	SAE	1	_	1	_	1
	3	NE	SAE	-	-	-	1	1
<i>Zygiella</i> sp. (undetermined) Genus sp. 6 (undetermined)	-		-	1	-	-		1
Genus sp. 7 (undetermined)	-	NE	-	1	-	1	1	1
	-	NE	-	-	-	1	-	-
Caponiidae	4	DD	CAF		1		1	
Caponia braunsi Purcell, 1904	4	DD	SAE	-	1	-	1	-
Chaireagathium africanum Lascart 1031	4	1.0	A.F.	4				
Chairmainean anning Late 2003	1	LC	AE	1	-	-	-	-
Cheiramiona ansiae Lotz, 2003	4	LC	SAE	-	-	-	1	1
Cheiramiona clavigera (Simon, 1897)	3	LC	SAE	1	1	-	1	1
Cheiramiona filipes Simon, 1898	2	LC	STHE	1	-	-	-	-
Cheiramiona paradisus Lotz, 2003	2	LC	STHE	1	-	1	-	1
Clubionidae								
Clubiona abbajensis Strand, 1906	1	LC	AE	1	1	1	-	-
Clubiona africana Lessert, 1921†	1	LC	AE	-	-	-	1	-

TABLE 1-A1 (Continues): Spiders of the Addo Elephant National Park, listing their endemicity, conservation status, distribution and areas sampled in the park.

TABLE 1-A1 (Continues): Spiders of the Addo Elephant N								
Species	END	CS	DIS	wc	KA	DA	MC	ZB
Clubiona kiboschensis Lessert, 1921	1	LC	AE	-	1	-	-	1
Clubiona pongolensis Lawrence, 1952	3	LC	SAE	1	-	-	-	-
Clubiona pupillaris Lawrence, 1938†	3	LC	SAE	-	-	-	-	1
Corinnidae								
Cambalida dippenaarae Haddad, 2012	1	LC	AE	1	-	-	-	-
Coenoptychus tropicalis (Haddad, 2004)	1	LC	AE	1	-	-	-	-
Ctenidae								
Africactenus tridentatus Hyatt, 1954	2	LC	STHE	1	1	-	-	-
Ctenus gulosus Des Arts, 1912	2	LC	STHE	1	-	-	-	-
Cyatholipidae								
Ubacisi capensis Griswold, 1987	4	LC	SAE	1	-	-	-	-
Ulwembua pulchra Griswold, 1987	4	LC	SAE	-	1	-	-	-
Cyrtaucheniidae								
Ancylotrypa cornuta Purcell, 1904	5	DD	ECE	-	1	-	-	-
Deinopidae								
Menneus camelus Pocock, 1902	3	LC	SAE	1	-	-	-	-
Dictynidae								
Achaeodictyna ulova Griswold & Meikle-Griswold, 1987	3	LC	SAE	1	-	1	-	1
Dictyna sp. (undetermined)	-	NE	-	1	-	-	-	-
Mashimo leleupi Lehtinen, 1967	1	LC	AE	-	1	-	-	-
Dipluridae								
Allothele australis (Purcell, 1903)	4	LC	SAE	-	1	1	-	-
Eresidae								
Dresserus sp. 1 (immature)	-	NE	-	1	1	-	-	-
Gandanameno purcelli (Tucker, 1920)	3	LC	SAE	1	-	-	-	-
Stegodyphus dumicola Pocock, 1898	2	LC	STHE	-	-	-	1	-
Gnaphosidae								
Amusia cataracta Tucker, 1923	2	LC	STHE	-	-	1	1	-
Aphantaulax signicollis Tucker, 1923	2	LC	STHE	-	-	1	-	-
Aphantaulax inornata Tucker, 1923	2	LC	STHE	1	-	-	-	-
Nomisia varia (Tucker, 1923)	2	LC	STHE	-	1	-	1	-
Xerophaeus communis Purcell, 1907	3	LC	SAE	1	1	-	1	-
Xerophaeus crustosus Purcell, 1907	5	DD	ECE	_	1	_	-	-
Zelotes albanicus (Hewitt, 1915)	3	LC	SAE	1	1	1	_	_
Hahniidae								
Hahnia tabulicola Simon, 1898	1	LC	AE	_	_	_	_	1
Idiopidae	-	10	712					-
Idiops sp. (immature)	_	NE	_		1	_	_	_
Linyphiidae		IVL						
Agyneta habra (Locket, 1968)†	1	LC	AE			1		
Mecynidis dentipalpis Simon, 1894	2	LC	STHE	1	-	1	_	_
	0	LC	С	1	-	-	1	-
Microlinyphia sterilis (Pavesi, 1883)				1	-	-	1	-
Pelecopsis intricata Jocqué, 1984	4	LC	SAE	1	-	-	-	-
Typhistes gloriosus Jocqué, 1984	3	LC	SAE	1	-	-	-	-
Liocranidae								
Coryssiphus unicolor Simon, 1903	4	DD	SAE	-	-	1	1	-
Rhaeboctesis secundus Tucker, 1920	2	LC	STHE	1	-	-	-	-
Lycosidae								
Amblyothele latedissipata Russell-Smith, Jocqué & Alderweireldt, 2009	1	LC	AE	-	1	-	-	-
Arctosa promontorii (Pocock, 1900)	3	LC	SAE	1	1	_	_	
Evippomma squamulatum (Simon, 1898)	2	LC	STHE	-	1	1	_	
Foveosa foveolata (Purcell, 1903)	1	LC	AE	1	-	-	_	
	1	NE NE	AE -	1				
Minicosa sp. (new?)	2				1	1	1	1
Pardosa crassipalpis Purcell, 1903†	2	LC	STHE	1	1	1	1	1
Proevippa biampliata (Purcell, 1903)	2	LC	STHE	-	-	1	-	1
Proevippa schreineri (Purcell, 1903)†	2	LC	STHE	1	1	-	-	-
Trabea purcelli Roewer, 1951	1	LC	AE	1	-	1	1	-
Migidae								
Moggridgea rupicoloides Hewitt, 1914	5	DD	SAE	-	1	-	-	-

TABLE 1-A1 (Continues): Spiders of the Addo Elephant Na	tional Park, li:	sting their end	demicity, conse	rvation status	, distribution	and areas sam	pled in the pa	rk.
Species	END	cs	DIS	wc	KA	DA	MC	ZB
Mimetidae								
Ero capensis Simon, 1895	2	LC	STHE	1	-	-	-	-
Mimetus sp. 1 (new)	-	NE	-	1	-	1	-	-
Nemesiidae								
Hermacha grahami (Hewitt, 1915)	5	DD	ECE	1	-	1	-	-
Lepthercus dregei Purcell, 1902	2	LC	STHE	1	-	-	-	-
Oecobiidae								
Oecobius navus Blackwall, 1859	0	LC	С	-	-	-	1	-
Oonopidae								
Gamasomorpha australis Hewitt, 1915	3	LC	SAE	1	-	-	-	_
Oxyopidae								
Hamataliwa rostrifrons (Lawrence, 1928)	2	LC	STHE	1	_	-	-	1
Oxyopes affinis Lessert, 1915	1	LC	AE	1	_	1	-	_
Oxyopes bothai Lessert, 1915	1	LC	AE	_	1	1	-	_
Oxyopes flavipalpis (Lucas, 1858)	1	LC	AE	1	-	1	_	_
Oxyopes longispinosus Lawrence, 1938	3	LC	AE	1	_	-	_	1
Oxyopes russoi Caporiacco, 1940	1	LC	AE	1	1	1		1
Oxyopes strandi (Caporiacco, 1939)	1	LC	AE	1	_	-		1
	1	NE NE	AE -	1	1	1	1	1
Oxyones yagelsangeri Lossert, 1946	1				1	1	1	1
Oxyopes vogelsangeri Lessert, 1946	1	LC	AE	1	-	-		
Peucetia nicolae Van Niekerk & Dippenaar-Schoeman, 1994	3	LC	SAE	1	-	-	-	-
Palpimanidae						4		
Palpimanus sp. (immature)	-	NE	-	-	-	1	-	-
Philodromidae								
Gephyrota glauca (Jézéquel, 1966)†	1	LC	AE	-	-	1	-	-
Hirriusa arenacea (Lawrence, 1927)	2	LC	STHE	-	-	-	-	-
Philodromus brachycephalus (Lawrence, 1952)	1	LC	AE	-	-	-	-	1
Philodromus browningi (Lawrence, 1952)	2	LC	STHE	1	-	1	-	1
Philodromus sp. 3 (immature)	-	NE	-	-	1	1	-	-
Thanatus vulgaris Simon, 1870†	0	LC	С	1	-	1	-	-
Tibellus minor Lessert, 1919†	1	LC	AE	1	-	1	-	-
Philodromidae (new genus)	-	NE	-	-	-	1	-	-
Pholcidae								
Quamtana ciliata (Lawrence, 1938)	3	DD	SAE	-	-	-	1	-
Quamtana vidal Huber, 2003	3	LC	SAE	-	-	-	1	-
Spermophora pembai Huber, 2003	5	DD	ECE	-	1	1	-	-
Phyxelididae								
Vidole capensis (Pocock, 1900)	3	LC	SAE	1	-	-	1	-
Vidole schreineri (Purcell, 1904)	3	LC	SAE	-	1	-	-	-
Pisauridae								
Afropisaura rothiformis (Strand, 1908)	1	LC	AE	1	-	1	1	-
Chiasmopes lineatus (Pocock, 1898)	1	LC	AE	1	1	-	-	-
Chiasmopes sp. (new?)	-	NE	-	1	-	-	-	-
Cispius variegatus Simon, 1898	1	LC	AE	1	-	-	-	-
Euprosthenops australis Simon, 1898†	1	LC	AE	-	-	1	-	_
Euprosthenops bayaonianus Brito Capello, 1867†	1	LC	AE	_	1	-	_	_
Euprosthenopsis pulchella (Pocock, 1902)	2	LC	STHE	1	-	_	_	_
Rothus aethiopicus Pavesi, 1883	1	LC	AE	1	_	1	_	_
Salticidae	1	LC	AL	1		1		-
Baryphas ahenus Simon, 1902	1	LC	AE	1		1		
	2	LC	STHE	1	-	1		_
Brancus mustelus (Simon, 1902)	4		SAE		-	_		
Colaxes benjamini Wesołowska & Haddad, 2013		LC		1	1	-		
Cyrba nigrimana Simon, 1900†	3	LC	SAE	1	1	-	-	-
Dendryphantes purcelli Peckham & Peckham, 1904	1	LC	AE	-	-	1	-	-
Evarcha denticulata Wesołowska & Haddad, 2013	4	LC	SAE	1	-	-	-	-
Heliophanus aberdarensis Wesołowska, 1986	1	LC	AE	-	-	1	1	-
Heliophanus demonstrativus Wesołowska, 1986	1	LC	AE	-	1	1	-	-
Heliophanus gramineus Wesołowska & Haddad, 2013†	3	LC	SAE	1	-	-	-	1
Heliophanus hastatus Wesołowska, 1986	2	LC	STHE	-	-	-	-	-
Heliophanus modicus Peckham & Peckham, 1903	1	LC	AE	1	-	1	1	-
Hyllus argyrotoxus Simon, 1902	1	LC	AE	1				

TABLE 1-A1 (Continues): Spiders of the Addo Elephant Nat	ionai Park, iis	ting their end	demicity, conse	ervation status	s, distribution	and areas san	ipled in the pa	rk.
Species	END	CS	DIS	WC	KA	DA	MC	ZB
Hyllus brevitarsis Simon, 1902	1	LC	AE	1	-	-	-	-
Hyllus dotatus (Peckham & Peckham, 1903)	1	LC	AE	1	-	-	-	-
Icius insolidus (Wesołowska, 1999)	2	LC	STHE	-	-	1	-	1
Massagris honesta Wesołowska, 1993	4	LC	SAE	1	-	1	-	1
Massagris mirifica Peckham & Peckham, 1903†	3	LC	SAE	1	1	1	-1	-
Menemerus bivittatus (Dufour, 1831)	0	LC	С	-	-	1	-	-
Menemerus transvaalicus Wesołowska, 1999	2	LC	STHE	-	-	1	-	-
Myrmarachne laurentina Bacelar, 1953	1	LC	AE	1	-	-	-	1
Pellenes tharinae Wesołowska, 2006	2	LC	STHE	1	-	-	-	1
Pseudicius africanus Peckham & Peckham, 1903	2	LC	STHE	-	-	-	-	1
Pseudicius maculatus Haddad & Wesołowska, 2011†	2	LC	STHE	1	1	-	-	-
Rhene machadoi Berland & Millot, 1941	1	LC	AE	1	-	-	-	-
Rumburak hilaris Wesołowska, Azarkina & Russell-Smith, 2014	4	LC	SAE	-	1	-	-	1
Thyene australis Peckham & Peckham, 1903	1	LC	AE	1	-	-	-	1
Thyene inflata (Gerstäcker, 1873)	1	LC	AE	-	1	-	-	-
Thyene natalii Peckham & Peckham, 1903	1	LC	AE	1	-	1	-	-
Thyene ogdeni Peckham & Peckham, 1903	1	LC	AE	1	-	-	-	-
Thyene semiargentea Simon, 1884	1	LC	AE	-	-	-	-	1
Thyene thyenioides (Lessert, 1925)	1	LC	AE	-	-	1	-	-
Thyenula aurantiaca (Simon, 1902)	2	LC	STHE	-	1	-	-	-
Thyenula juvenca Simon, 1902	3	LC	SAE	1	-	-	-	-
Thyenula leighi (Peckham & Peckham, 1903)	4	LC	SAE	1	-	-	-	-
Tusitala hirsuta Peckham & Peckham, 1902	1	LC	AE	1	_	-	_	_
Scytodidae								
Scytodes caffra Purcell, 1904	1	LC	AE	_	_	-	1	-
Scytodes cedri Purcell, 1904†	4	LC	SAE	_	_	1	1	_
Scytodes rubra Lawrence, 1937	4	LC	SAE	_	_	-	1	_
Segestriidae								
Ariadna lightfooti Purcell, 1904	3	LC	SAE	1	-	_	_	_
Selenopidae	J	10	57.12	-				
Anyphops schoenlandi (Pocock, 1902)	5	DD	ECE	_	1	1		_
Anyphops senceri (Pocock, 1896)	3	LC	SAE	_	1	_		_
Sicariidae	3	LC	JAL					
Hexophthalma spatulata (Pocock, 1900)	4	LC	SAE	_	_	1		_
Sparassidae	7	LC	JAL			1		
Olios schonlandi (Pocock, 1900)	5	DD	ECE	1		1		
Parapalystes lycosinus (Pocock, 1900)	4	LC	SAE	1		_	1	_
	4	LC	JAL	1	-	-	1	-
Tetragnathidae		NE		1				
Diphya sp. 1 (undetermined)	-	NE	-	1	-	-	-	-
Leucauge decorata (Blackwall, 1864)	0	LC	C	1	-	-	-	1
Leucauge festiva Blackwall, 1866†	1	LC	AE	1	-	1	-	1
Leucauge levanderi (Kulczynski, 1901)	1	LC	AE	1	-	-	-	1
Leucauge thomeensis Kraus, 1960	1	LC	AE	1	-	-	-	-
Tetragnatha nitens Audouin, 1826†	0	LC	С	-	-	1	-	-
Theraphosidae	_			٠		_		
Harpactira curvipes Pocock, 1897	5	DD	ECE	1	-	1	-	-
Harpactirella magna Purcell, 1903	5	DD	ECE	-	1	1	-	-
Theridiidae								
Argyrodes convivans Lawrence, 1937	2	LC	STHE	1	-	1	-	-
Argyrodes zonatus (Walckenaer, 1841)	1	LC	AE	1	-	-	1	-
Chrysso sp. 1 (undetermined)	-	NE	-	1	-	1	-	-
Dipoena sp. 1 (undetermined)	-	NE	-	1	-	1	-	-
Enoplognatha molesta O.PCambridge, 1904	3	LC	SAE	1	-	-	-	-
Episinus bilineatus Simon, 1894	2	LC	STHE	-	-	-	-	-
Episinus bishopi (Lessert, 1929)	1	LC	AE	1	-	-	1	-
Episinus marignaci (Lessert, 1933)	2	LC	STHE	1	-	1	-	-
Euryopis episinoides (Walckenaer, 1847)	0	LC	С	1	-	-	1	-
Euryopis funebris (Hentz, 1850)	0	LC	С	1	-	1	-	-
Latrodectus geometricus O.PCambridge, 1904	0	LC	С	1	-	1	-	-
Meotipa pulcherrima (Mello-Leitão, 1917)	0	LC	С	1	-	1	-	-

TABLE 1-A1 (Continues): Spiders of the Addo Elephant National Park, listing their endemicity, conservation status, distribution and areas sampled in the park.

TABLE 1-A1 (Continues):         Spiders of the Addo Elephant Nat								
Species	END	CS	DIS	WC	KA	DA	MC	ZB
Parasteatoda tepidariorum (C.L. Koch, 1841)	0	LC	С	1	1	-	1	-
Phoroncidia capensis (Simon, 1895)	5	DD	ECE	1	-	-	-	-
Phoroncidia eburnea (Simon, 1895)	3	LC	SAE	1	-	1	-	-
Phycosoma martinae (Roberts, 1983)	0	LC	С	1	-	-	-	-
Steatoda capensis O.PCambridge, 1904	0	LC	С	1	1	1	-	-
Steatoda grossa (C.L. Koch, 1838)	0	LC	С	-	1	-	1	-
Theridion purcelli O.PCambridge, 1904	3	LC	SAE	-	-	1	-	1
heridion piliphilum Strand, 1907	3	LC	SAE	1	-	-	-	-
Theridion sp. 2 (undetermined)	-	NE	-	1	1	-	1	-
Theridion sp. 4 (undetermined)	-	NE	-	-	-	1	1	-
Theridion sp. 7 (undetermined)	-	NE	-	1	-	1	1	-
heridiidae sp. 1 (undetermined)	-	NE	-	1	-	1	-	-
heridiidae sp. 8 (undetermined)	-	NE	-	1	-	-	1	-
homisidae								
Insiae tuckeri (Lessert, 1919)	1	LC	AE	1	-	1	-	-
Diaea dorsata (Fabricius, 1777)	0	LC	С	1	-	-	-	-
Diaea puncta Karsch, 1884	1	LC	AE	1	-	1	-	-
Diaea rohani Fage, 1923	2	LC	STHE	-	-	-	1	-
dolopelus almiae Dippenaar-Schoeman, 1986†	4	LC	SAE	1	-	1	1	-
Misumenops rubrodecoratus Millot, 1941	1	LC	AE	-	-	1	-	-
Monaeses quadrituberculatus Lawrence, 1927	1	LC	AE	-	-	1	-	1
Monaeses sp. 2 (new)	-	NE	-	-	-	1	-	-
Mystaria lindaicapensis Lewis & Dippenaar-Schoeman, 2014	4	VU	SAE	1	-	-	-	-
Nystaria variabilis Lessert, 1919	1	LC	AE	1	-	1	-	-
xytate argenteooculata (Simon, 1886)	1	LC	AE	1	-	-	-	-
zyptila caenosa Jézéquel, 1966	1	LC	AE	1	-	1	-	-
actactes compactus Lawrence, 1947	3	LC	SAE	-	-	-	-	1
arabomis martini Lawrence, 1928	1	LC	AE	-	-	-	-	1
haenopoma nigropunctatum O.PCambridge, 1883	3	LC	SAE	1	-	-	-	1
herecydes tuberculatus (O.PCambridge, 1883)	2	LC	STHE	1	-	1	-	1
hrynarachne melloleitaoi Lessert, 1933	2	LC	STHE	1	-	1	-	-
uncinia aethiops Simon, 1901†	1	LC	AE	1	-	1	-	-
uncinia flavida (Simon, 1881)	0	LC	С	1	-	1	-	1
imorcus cotti Lessert, 1936	1	LC	AE	-	-	1	1	-
tiphropus affinis Lessert, 1923	2	LC	STHE	-	1	-	-	-
ynema decens (Karsch, 1878)	2	LC	STHE	-	-	1	-	1
ynema diana (Audouin, 1826)	1	LC	AE	1	-	1	-	-
ynema langheldi Dahl, 1907	1	LC	AE	1	-	1	-	1
ynema mandibulare Dahl, 1907	2	LC	AE	-	-	-	-	1
ynema marlothi Dahl, 1907	2	LC	STHE	1	-	-	-	-
ynema nigrotibiale Lessert, 1919	1	LC	AE	1	-	1	1	1
homisops bullatus Simon, 1895	2	LC	STHE	1	-	1	-	-
homisops pupa Karsch, 1879	1	LC	AE	1	-	-	-	-
homisops sulcatus Simon, 1895	1	LC	AE	1	-	-	-	-
homisus australis Comellini, 1957	1	LC	AE	-	-	-	-	1
homisus blandus Karsch, 1880†	1	LC	AE	1	-	-	-	-
homisus citrinellus Simon, 1875	0	LC	С	1	-	1	1	-
homisus daradiodes Simon, 1890†	0	LC	С	1	-	1	-	1
homisus scrupeus Simon, 1886	1	LC	AE	1	-	-		-
homisus stenningi Pocock, 1900†	1	LC	AE	-	-	1	1	1
marus cameliformis Millot, 1941	1	LC	AE	1	1	1	1	-
marus comellinii Garcia-Neto, 1989	1	LC	AE	1	-	-	-	-
ysticus natalensis Lawrence, 1938	2	LC	STHE	-	-	1	1	-
rachelidae								
froceto africana (Simon, 1910)	2	LC	STHE	1	-	1	1	-
froceto martini (Simon, 1897)	2	LC	STHE	1	_	_	-	_
ocquestus schenkeli (Lessert, 1923)†	1	LC	AE	1	1	1	-	_
hysanina transversa Lyle & Haddad, 2006	3	LC	SAE	1	1	-	1	_
rachelas sp. (immature)	-	NE	- -	1			-	_
rochanteriidae				-				
Platyoides leppanae Pocock, 1902	1	LC	AE	1				

TABLE 1-A1 (Continues): Spiders of the Addo Elephant National Park, listing their endemicity, conservation status, distribution and areas sampled in the park.

Species	END	CS	DIS	wc	KA	DA	MC	ZB
Uloboridae								
Hyptiotes akermani Wiehle, 1964	3	LC	SAE	1	-	-	-	-
Miagrammopes brevicaudatus Cambridge, 1882†	2	LC	STHE	1	-	-	-	-
Miagrammopes constrictus Purcell, 1904	3	LC	SAE	1	-	-	-	-
Philoponella angolensis Lessert, 1933	1	LC	AE	1	-	-	1	-
Uloborus planipedius Simon, 1896	1	LC	AE	1	-	1	-	-
Uloborus plumipes Lucas, 1846	0	LC	С	1	1	1	-	-
Zodariidae								
Caesetius murinus Simon, 1893	4	LC	SAE	1	-	-	-	-
Caesetius spenceri (Pocock, 1900)	3	LC	SAE	1	1	-	-	-
Chariobas decoratus Lawrence, 1952	1	LC	AE	1	-	-	-	-
Cydrela spinifrons Hewitt, 1915	3	DD	SAE	1	-	1	-	-
Cydrela sp. 1 (new?)	-	NE	-	1	1	-	-	-
Diores pauper Jocqué, 1990	3	LC	SAE	1	-	-	-	1
Procydrela precursor Jocqué, 1999	4	DD	SAE	1	-	-	-	-
Psammoduon canosum (Simon, 1910)	2	LC	STHE	1	-	-	-	-
Rotundrela sp. 1 (new?)	-	NE	-	1	-	-	-	-
Systenoplacis fagei (Lawrence, 1936)	3	LC	SAE	1	-	-	-	-
Zoropsidae								
Griswoldia urbensis (Lawrence, 1942)	4	LC	SAE	1	1	-	1	-
Phanotea digitata Griswold, 1994	4	DD	SAE	1	-	-	-	-
Total	-		-	182	59	105	60	59

Endemicity (END): (6) only known from the type locality; (5) endemic to the Eastern Cape; (4) known from two adjoining provinces; (3) endemic to South Africa, (2) Southern Africa or (1) the Afrotropical Region; (0) also recorded outside the Afrotropical Region.

 $Conservation\ status\ (CS): LC,\ least\ concern;\ DD,\ data\ deficient;\ NE,\ not\ evaluated;\ VU,\ vulnerable.$ 

Distribution (DIS): C, cosmopolitan or wider than Africa; AE, African endemic; STHE, Southern African endemic; SAE, South African endemic; ECE, Eastern Cape endemic.

Locality: WC, Woody Cape; KA, Kabouga; DA, Darlington Dam; MC, Main Camp; ZB, Zuurberg.

 $\ensuremath{\dagger}\xspace$  , indicates species previously recorded from the park.