

## Supplemental Information

### Biological Conservation

No safe haven: protection levels show imperilled South African reptiles not sufficiently safeguarded despite low average extinction risk

*Krystal A. Tolley, Joshua Weeber, Bryan Maritz, Luke Verburgt, Michael F. Bates, Werner Conradie, Margaretha D. Hofmeyr, Andrew A. Turner, Jessica M. da Silva, Graham J. Alexander*

### Supplemental Figures S1-S3

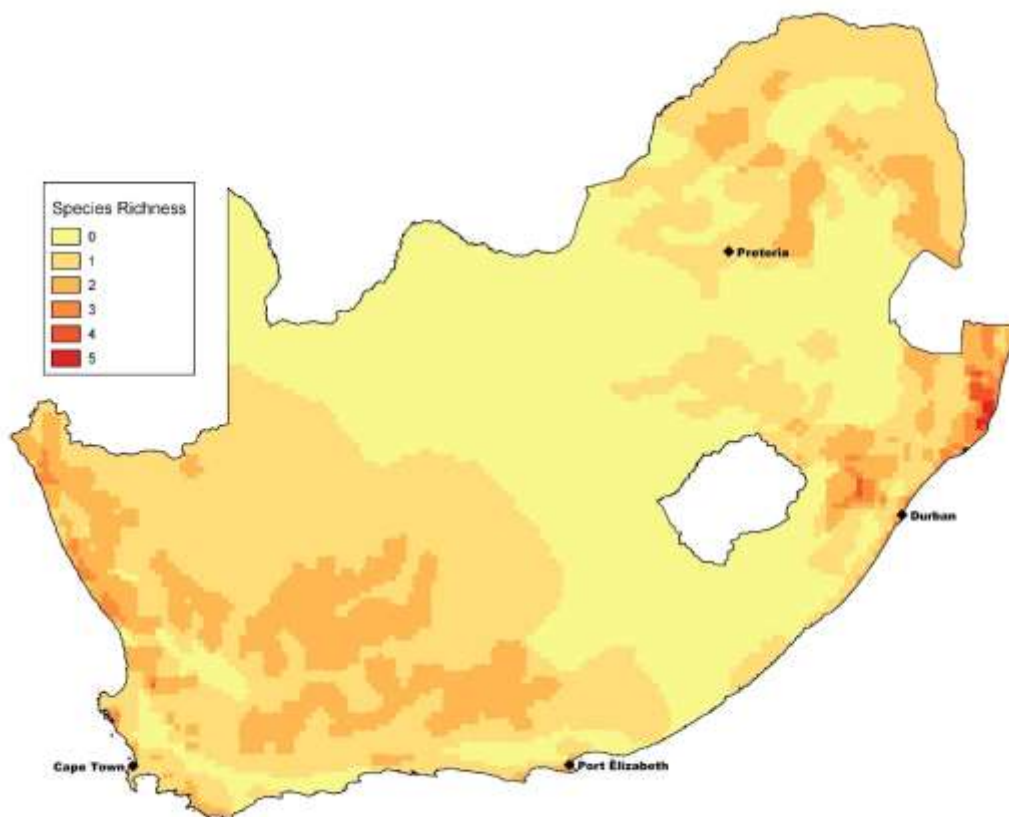


Figure S1. Species richness of threatened and Near Threatened reptiles in South Africa.

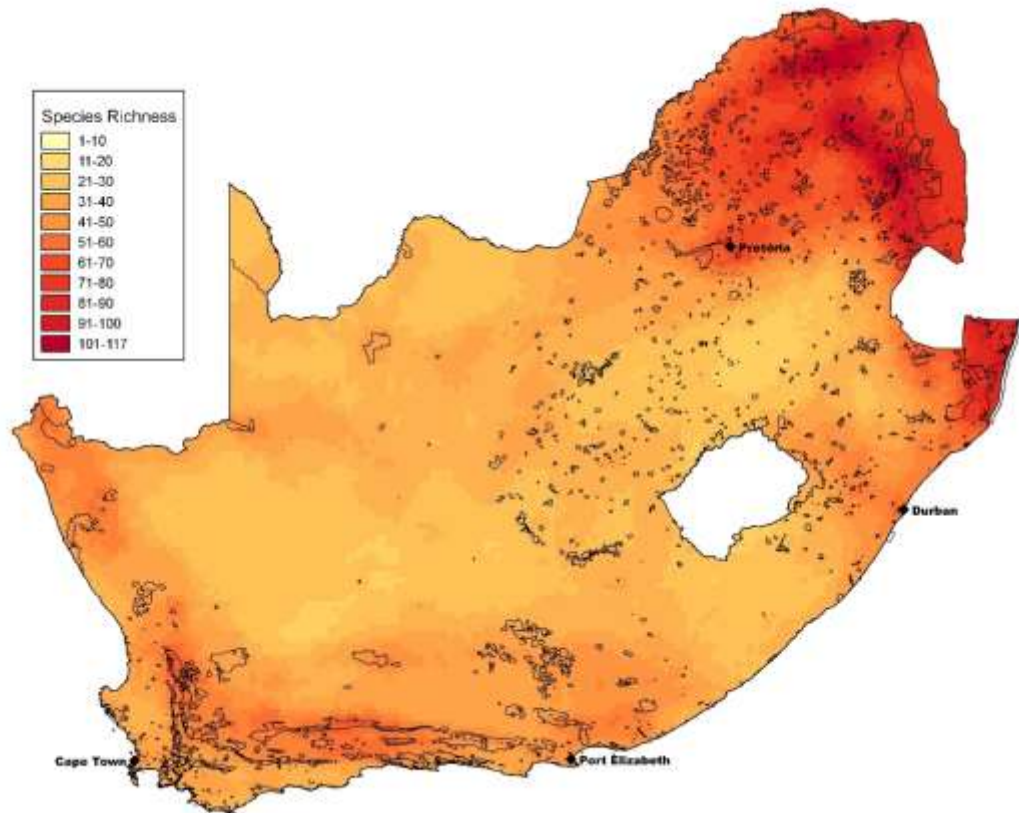


Figure S2. Reptile species richness in South Africa (darker shades indicate higher richness), with the current protected area network indicated by the black outlines.

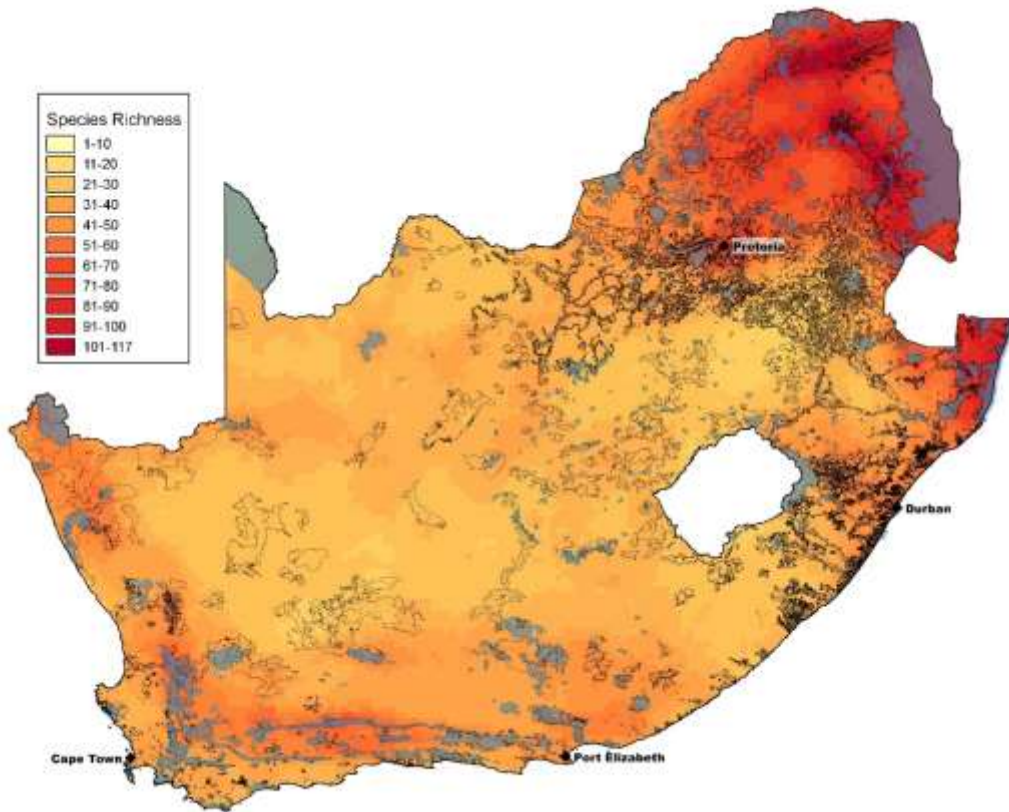


Figure S3. Reptile species richness in South Africa (darker shades indicate higher richness), with the current protected area network indicated by the grey shaded polygons and the protected area expansion network indicated by black polygon outlines.

## Appendix S1. Protocol for Measuring Protection Level for South African Reptiles

The following process was applied to measure the level of protection for each species, using the interpreted distributions for the species (see main text).

We evaluated the effectiveness of South Africa's protected area network in ensuring that minimum viable populations of reptiles are protected. We set a conservation target for protection of at least 10 fragments of protected habitat, each with areas greater than 10 km<sup>2</sup> (1000 ha) for a total of 100 km<sup>2</sup> for each species. The fragment size was considered to be the minimum area that would support viable populations, with the total area considered to be the total area needed to safeguard the species survival into the future. The interpreted distributions for each species were then intersected with South Africa's protected area network (Government of South Africa, 2010). Only protected areas recognised in terms of the South African National Environmental Management: Protected Areas Act (Act 57 of 2003) and considered secure into the future were included (Island Nature Reserves, Forest Wilderness Areas, Forest Nature Reserves, World Heritage Sites, Wilderness Areas, Provincial Nature Reserves and National Parks). Species that showed no intersect with protected areas were considered Not Protected, whereas those with at least ten 10 km<sup>2</sup> intersects with protected areas were considered Well Protected. For species with fewer than ten 10 km<sup>2</sup> intersects, the protected areas were then rated for their effectiveness category (Table S1). The efficacy of each protected area was rated for that species (good, fair, poor), which was then used to weight the total area (km<sup>2</sup>) for that protected area (1.0, 0.5 and 0.1, respectively). These weighted areas were summed to produce an estimate of total area of protected geographic range. The protection level for each species was then classified based on the proportion of the conservation target (100 km<sup>2</sup> of total habitat) that was met (Not Protected: <5% of target; Poorly Protected: 5-49% of target; Moderately Protected: 50-99% of target; Well Protected: 100% of target, Table S2). Targets were down-weighted for non-endemic species according to the proportion of their overall distribution within South Africa (Supplementary Information: Tables S1-S3).

Protected areas of less than 10 km<sup>2</sup> (>1000 ha) were excluded (as having non-viable populations into the future), unless they formed part of a protected area 'cluster' (protected areas with adjoining borders) where we assumed that individuals could disperse between protected area fragments.

### Step 1:

1. Intersect interpreted distribution map with protected areas shape file layer. Is there intersect with protected areas or protected area clusters that are at least 10 km<sup>2</sup>?
  - a. If no intersect, then the species is '**Not Protected**'
  - b. If there is intersect, proceed to step 2.

### Step 2:

1. Tabulate intersects larger than 10 km<sup>2</sup>.
  - i. Are there 10 or more of these intersects?
    - a. If yes, then the species is '**Well Protected**'.
    - b. If no, then go to step 3.

### Step 3:

For species with fewer than 10 intersects:

1. For each species, generate a list of protected areas that intersect with the interpreted distribution of that species. Tabulate the size of each intersect.
2. Rate each protected area for its efficacy (good, fair, poor) for that species according to expert knowledge of the suitable habitat available (see Table S1). Weight the total area of the intersect (km<sup>2</sup>) for that protected area for the efficacy rating as 1.0, 0.5, 0.1, respectively.

<b>Effectiveness category</b>	<b>Definition</b>
Poor	Protected area provides no mitigation of major threats to species – individuals inside the protected area are no better off than those outside
Fair	Protected area provides some mitigation of major threats to species, but is not fully effective
Good	Protected area is fully effective in protecting the species against major threats and ensuring the long-term persistence of the population present within the protected area

The efficacy rating is scaled to the four protection level categories so that when viability and effectiveness are combined for up to 10 populations, a species will fall within protection level categories according to the following matrix:

<b>Population viability</b>	<b>Protected Area Effectiveness (E<sub>PA</sub>)</b>		
	<b>Poor</b>	<b>Fair</b>	<b>Good</b>
Non-viable	Not protected	Poorly protected	Poorly protected
Viable	Poorly protected	Moderately protected	Well protected

3. For each species, calculate the area of suitable habitat under formal protection by summing the scaled efficacy ratings (from Step 2) of all the protected area intersects.
4. Compare the sum of the values from Step 3 to the conservation target area of 100 km<sup>2</sup> (relates to 10 protected areas with 10 km<sup>2</sup>). Conservation target values for non-endemic species become down-weighted according to the proportion of the species distribution within South Africa, e.g. 50% of the distribution in South Africa reduces the conservation target area to 50 km<sup>2</sup>.
5. Assign a Protection Level category according to whether species have met the conservation target of 100 km<sup>2</sup> (or appropriate weighted value) of habitat within protected areas.

Not protected  $\leq$  5% of target; Poorly protected 5 - 49% of target; Moderately protected 50 - 99% of target; Well protected  $\geq$  100% of target.

## References relating to the protocol:

- Cox, J.R., MacLaughlin, M., Gilbert, T., 1994. Closing the gaps in Florida's wildlife habitat conservation system: recommendations to meet minimum conservation goals for declining wildlife species and rare plant and animal communities. Florida Game and Fresh Water Fish Commission, Tallahassee, Florida
- Government of South Africa. 2010. National Protected Area Expansion Strategy for South Africa 2008, Priorities for expanding the protected area network for ecological sustainability and climate change adaptation. Department of Environmental Affairs, Pretoria.
- Mace, G.M., Collar, N.J., Gaston, K.J., Hilton-Taylor, C., Akcakaya, H.R., Leader-Williams, N., Milner-Gulland, E.J., Stuart, S.N., 2008. Quantification of extinction risk: IUCN's system for classifying threatened species. *Conserv. Biol.* 22, 1424–1442.
- Pe'er, G., Tsianou, M.A., Franz, K.W., Matsinos, Y.G., Mazaris, A.D., Storch, D., Kopsova, L., Verboom, J., Baguette, M., Stevens, V.M., 2014. Toward better application of minimum area requirements in conservation planning. *Biol. Conserv.* 170, 92–102.
- Pfab, M.F., Victor, J.E., Armstrong, A.J., 2011. Application of the IUCN Red Listing system to setting species targets for conservation planning purposes. *Biodivers. Conserv.* 20, 1001–1012.
- QGIS Development Team. 2018. QGIS Geographic Information System (Version 2.18.2). Open Source Geospatial Foundation Project. <https://qgis.org/>
- Truill, L.W., Bradshaw, C.J., Brook, B.W., 2007. Minimum viable population size: a meta-analysis of 30 years of published estimates. *Biol. Conserv.* 139, 159–166.
- Verboom, J., Foppen, R., Chardon, P., Opdam, P., Luttikhuisen, P., 2001. Introducing the key patch approach for habitat networks with persistent populations: an example for marshland birds. *Biol. Conserv.* 100, 89–101.

Table S1. Full species list for South African reptiles and their threat status for 1990 (backcasted) and 2018. Categories and criteria match the IUCN abbreviations. Assessment type: G: Global, N: National, P: Peripheral (Not Evaluated), I: Introduced (Not Evaluated). Extent of Occurrence (EOO, km<sup>2</sup>) is also given. Protection Levels (PL): W: Well, M: Moderately, P: Poorly, N: Not Protected, EX: Extinct, NE: Not Evaluated.

Table S1

Group	Family	Species	Range size	Endemic	% range in SA	PL	Category 1990	Category 2018	Criteria 2018	Type	EOO
Chelonians											
	Cheloniidae	<i>Caretta caretta</i>	NA	Peripheral	0	NE	NE	NE		NE	0
	Cheloniidae	<i>Chelonia mydas</i>	NA	Peripheral	0	NE	NE	NE		NE	0
	Cheloniidae	<i>Eretmochelys imbricata</i>	NA	Peripheral	0	NE	NE	NE		NE	0
	Cheloniidae	<i>Lepidochelys olivacea</i>	NA	Peripheral	0	NE	NE	NE		NE	0
	Dermochelyidae	<i>Dermochelys coriacea</i>	NA	Peripheral	0	NE	NE	NE		NE	0
	Pelomedusidae	<i>Pelomedusa galeata</i>	876970	Endemic	100	W	LC	LC		G	1281865
	Pelomedusidae	<i>Pelomedusa subrufa</i>	111464	Not endemic	10	W	LC	LC		N	163198
	Pelomedusidae	<i>Pelusios castanoides</i>	3364	Not endemic	10	W	LC	VU	A4ac	N	7236
	Pelomedusidae	<i>Pelusios rhodesianus</i>	2809	Not endemic	10	W	LC	VU	A4ace	N	7363
	Pelomedusidae	<i>Pelusios sinuatus</i>	148630	Not endemic	10	W	LC	LC		N	293412
	Pelomedusidae	<i>Pelusios subniger</i>	831	Not endemic	10	W	LC	LC		N	13605
	Testudinidae	<i>Chersina angulata</i>	257654	Endemic	100	W	LC	LC		G	577310
	Testudinidae	<i>Chersobius boulengeri</i>	59749	Endemic	100	W	LC	EN	A4ace	G	135090
	Testudinidae	<i>Chersobius signatus</i>	28074	Endemic	100	W	NT	EN	A4ace	G	93678
	Testudinidae	<i>Homopus areolatus</i>	90409	Endemic	100	W	LC	LC		G	95682
	Testudinidae	<i>Homopus femoralis</i>	173021	Endemic	100	W	LC	LC		G	305050
	Testudinidae	<i>Kinixys lobatsiana</i>	44443	Endemic	100	W	NT	VU	A4cde	G	93017
	Testudinidae	<i>Kinixys natalensis</i>	37736	Endemic	100	W	NT	VU	A4c	G	104235
	Testudinidae	<i>Kinixys spekii</i>	166425	Not endemic	10	W	LC	LC		N	235627

**Table S1**

Group	Family	Species	Range size	Endemic	% range in SA	PL	Category 1990	Category 2018	Criteria 2018	Type	EOO
	Testudinidae	<i>Kinixys zombensis</i>	15926	Not endemic	10	W	LC	LC		N	19222
Chelonians											
	Testudinidae	<i>Psammobates geometricus</i>	167	Endemic	100	N	EN	CR	A4ace	G	2827
	Testudinidae	<i>Psammobates oculifer</i>	263060	Not endemic	50	W	LC	LC		N	541930
	Testudinidae	<i>Psammobates tentorius</i>	480476	Endemic	100	W	LC	NT	A4ce	G	627403
	Testudinidae	<i>Stigmochelys pardalis</i>	784879	Not endemic	10	W	LC	LC		N	1493156
Crocodilians											
	Crocodylidae	<i>Crocodylus niloticus</i>	133828	Not endemic	10	W	LC	VU	A2ac	N	318585
Squamates (lizards)											
	Agamidae	<i>Acanthocercus atricollis</i>	274444	Not endemic	10	W	LC	LC		N	423150
	Agamidae	<i>Agama aculeata</i>	967709	Not endemic	10	W	LC	LC		N	1401004
	Agamidae	<i>Agama anchietae</i>	92737	Not endemic	25	W	LC	LC		N	230964
	Agamidae	<i>Agama armata</i>	22695	Not endemic	10	W	LC	LC		N	26245
	Agamidae	<i>Agama atra</i>	1032945	Endemic	100	W	LC	LC		G	1337014
	Agamidae	<i>Agama hispida</i>	142754	Endemic	100	W	LC	LC		G	181944
	Amphisbaenidae	<i>Chirindia langi</i>	4069	Endemic	100	W	LC	LC		G	9313
	Amphisbaenidae	<i>Dalophia pistillum</i>	156095	Not endemic	10	W	LC	LC		N	192527
	Amphisbaenidae	<i>Monopeltis capensis</i>	186049	Endemic	100	W	LC	LC		G	225467
	Amphisbaenidae	<i>Monopeltis decosteri</i>	16149	Not endemic	10	W	LC	LC		N	17367
	Amphisbaenidae	<i>Monopeltis infuscata</i>	294701	Not endemic	10	W	LC	LC		N	461552
	Amphisbaenidae	<i>Monopeltis leonhardi</i>	NA	Peripheral	0	NE	NE	NE		N	0
	Amphisbaenidae	<i>Monopeltis mauricei</i>	65260	Not endemic	10	W	LC	LC		N	108064
	Amphisbaenidae	<i>Monopeltis sphenorhynchus</i>	15016	Not endemic	25	W	LC	LC		N	23102
	Amphisbaenidae	<i>Zygaspis quadrifrons</i>	321831	Not endemic	10	W	LC	LC		N	552461
	Amphisbaenidae	<i>Zygaspis vandami</i>	122198	Not endemic	50	W	LC	LC		N	204870



Table S1

Group	Family	Species	Range size	Endemic	% range in SA	PL	Category 1990	Category 2018	Criteria 2018	Type	EOO
Squamates (lizards)											
	Chamaeleonidae	<i>Bradypodion atromontanum</i>	1413	Endemic	100	W	LC	LC		G	2463
	Chamaeleonidae	<i>Bradypodion caeruleogula</i>	44	Endemic	100	P	EN	EN	B1ab(i,ii,iii)+ 2ab(i,ii,iii)	G	227
	Chamaeleonidae	<i>Bradypodion caffer</i>	89	Endemic	100	N	EN	EN	B1ab(i,ii,iii,i v,v)+2ab(i,ii, iii,iv,v)	G	255
	Chamaeleonidae	<i>Bradypodion damaranum</i>	2461	Endemic	100	W	LC	LC		G	4912
	Chamaeleonidae	<i>Bradypodion dracomontanum</i>	2339	Endemic	100	W	LC	NT	B1b(iii)	G	7897
	Chamaeleonidae	<i>Bradypodion gutturale</i>	51618	Endemic	100	W	LC	LC		G	74553
	Chamaeleonidae	<i>Bradypodion kentanicum</i>	2776	Endemic	100	P	NT	NT	B1b(i,ii,iii)	G	2988
	Chamaeleonidae	<i>Bradypodion melanocephalum</i>	8957	Endemic	100	M	NT	NT	B1b(iii)	G	17401
	Chamaeleonidae	<i>Bradypodion nemorale</i>	39	Endemic	100	P	NT	NT	B2b(iii)	G	184
	Chamaeleonidae	<i>Bradypodion ngomeense</i>	26	Endemic	100	P	NT	NT	B1b(iii)+2b(i ii)	G	47
	Chamaeleonidae	<i>Bradypodion occidentale</i>	35263	Endemic	100	W	LC	LC		G	58486
	Chamaeleonidae	<i>Bradypodion pumilum</i>	8165	Endemic	100	W	NT	NT	B2b(iii)	G	11519
	Chamaeleonidae	<i>Bradypodion setaroi</i>	5304	Endemic	100	W	LC	LC		G	7832
	Chamaeleonidae	<i>Bradypodion taeniabronchum</i>	521	Endemic	100	M	LC	LC		G	3244
	Chamaeleonidae	<i>Bradypodion thammobates</i>	3295	Endemic	100	P	VU	EN	B1ab(iii,v)	G	3929
	Chamaeleonidae	<i>Bradypodion transvaalense</i>	28664	Endemic	100	W	LC	LC		G	48816
	Chamaeleonidae	<i>Bradypodion ventrale</i>	196643	Endemic	100	W	LC	LC		G	227693
	Chamaeleonidae	<i>Chamaeleo dilepis</i>	470988	Not endemic	10	W	LC	LC		N	822811
	Chamaeleonidae	<i>Chamaeleo namaquensis</i>	184966	Not endemic	25	W	LC	LC		N	210785

Table S1

Group	Family	Species	Range size	Endemic	% range in SA	PL	Category 1990	Category 2018	Criteria 2018	Type	EOO
Squamates (lizards)											
	Cordylidae	<i>Chamaesaura aenea</i>	100757	Endemic	100	W	LC	LC		G	298179
	Cordylidae	<i>Chamaesaura anguina</i>	202360	Not endemic	10	W	LC	LC		N	939405
	Cordylidae	<i>Chamaesaura macrolepis</i>	77689	Near Endemic	90	W	LC	LC		G	184919
	Cordylidae	<i>Cordylus aridus</i>	816	Endemic	100	N	LC	LC		G	975
	Cordylidae	<i>Cordylus cloetei</i>	5655	Endemic	100	W	LC	LC		G	12300
	Cordylidae	<i>Cordylus cordylus</i>	234651	Endemic	100	W	LC	LC		G	385852
	Cordylidae	<i>Cordylus imkeae</i>	196	Endemic	100	N	LC	LC		G	199
	Cordylidae	<i>Cordylus jonesii</i>	163509	Not endemic	50	W	LC	LC		N	275243
	Cordylidae	<i>Cordylus macropholis</i>	2621	Endemic	100	W	LC	LC		G	21939
	Cordylidae	<i>Cordylus mclachlani</i>	9859	Endemic	100	W	LC	LC		G	11300
	Cordylidae	<i>Cordylus minor</i>	2101	Endemic	100	N	LC	LC		G	2191
	Cordylidae	<i>Cordylus niger</i>	503	Endemic	100	W	LC	LC		G	2410
	Cordylidae	<i>Cordylus oelofseni</i>	3873	Endemic	100	W	LC	LC		G	10172
	Cordylidae	<i>Cordylus vittifer</i>	267418	Near Endemic	90	W	LC	LC		G	359515
	Cordylidae	<i>Hemicordylus capensis</i>	44585	Endemic	100	W	LC	LC		G	98396
	Cordylidae	<i>Hemicordylus nebulosus</i>	10	Endemic	100	W	VU	VU	D2	G	10
	Cordylidae	<i>Karusasaurus polyzonus</i>	573167	Near Endemic	90	W	LC	LC		G	718347
	Cordylidae	<i>Namazonurus lawrenci</i>	7559	Endemic	100	W	LC	LC		G	11320
	Cordylidae	<i>Namazonurus peersi</i>	15677	Endemic	100	W	LC	LC		G	21408
	Cordylidae	<i>Ninurta coeruleopunctatus</i>	6130	Endemic	100	W	LC	LC		G	10951
	Cordylidae	<i>Ouroborus cataphractus</i>	68740	Endemic	100	W	LC	LC		G	93251
	Cordylidae	<i>Platysaurus attenboroughi</i>	8887	Not endemic	50	W	LC	LC		G	12217
	Cordylidae	<i>Platysaurus broadleyi</i>	6306	Endemic	100	W	LC	LC		G	12448

Table S1

Group	Family	Species	Range size	Endemic	% range in SA	PL	Category 1990	Category 2018	Criteria 2018	Type	EOO
	Cordylidae	<i>Platysaurus capensis</i>	5162	Endemic	100	W	LC	LC		G	5291
Squamates (lizards)											
	Cordylidae	<i>Platysaurus guttatus</i>	38167	Endemic	100	W	LC	LC		G	38312
	Cordylidae	<i>Platysaurus intermedius</i>	113170	Not endemic	10	W	LC	LC		N	153850
	Cordylidae	<i>Platysaurus lebomboensis</i>	6774	Not endemic	50	W	LC	LC		G	7709
	Cordylidae	<i>Platysaurus minor</i>	31018	Endemic	100	W	LC	LC		G	31231
	Cordylidae	<i>Platysaurus monotropis</i>	641	Endemic	100	N	NT	NT	B1b(iii)	G	943
	Cordylidae	<i>Platysaurus orientalis</i>	21893	Endemic	100	W	LC	LC		G	23213
	Cordylidae	<i>Platysaurus relictus</i>	3506	Endemic	100	P	LC	LC		G	3553
	Cordylidae	<i>Pseudocordylus langi</i>	1873	Not endemic	50	W	LC	LC		G	2036
	Cordylidae	<i>Pseudocordylus melanotus</i>	222743	Near Endemic	90	W	LC	LC		G	335357
	Cordylidae	<i>Pseudocordylus microlepidotus</i>	153797	Endemic	100	W	LC	LC		G	284165
	Cordylidae	<i>Pseudocordylus spinosus</i>	5073	Endemic	100	W	LC	LC		G	9618
	Cordylidae	<i>Pseudocordylus transvaalensis</i>	4591	Endemic	100	W	LC	LC		G	13915
	Cordylidae	<i>Smaug barbertonensis</i>	24370	Not endemic	50	W	LC	LC		G	24386
	Cordylidae	<i>Smaug breyeri</i>	16625	Endemic	100	W	LC	LC		G	17523
	Cordylidae	<i>Smaug depressus</i>	13346	Endemic	100	W	LC	LC		G	20510
	Cordylidae	<i>Smaug giganteus</i>	17950	Endemic	100	N	VU	VU	A2bcd+4bcd	G	37617
	Cordylidae	<i>Smaug vandami</i>	34304	Endemic	100	W	LC	LC		G	68229
	Cordylidae	<i>Smaug warreni</i>	17146	Not endemic	50	W	LC	LC		G	17223
	Gekkonidae	<i>Afroedura amatolica</i>	3063	Endemic	100	M	LC	LC		G	3762
	Gekkonidae	<i>Afroedura broadleyi</i>	2520	Endemic	100	P	LC	LC		G	3769
	Gekkonidae	<i>Afroedura granitica</i>	NA	Endemic	100	N	DD	DD		G	0
	Gekkonidae	<i>Afroedura haackei</i>	1449	Endemic	100	W	LC	LC		G	1729
	Gekkonidae	<i>Afroedura halli</i>	19478	Not endemic	75	N	LC	LC		G	30534

Table S1

Group	Family	Species	Range size	Endemic	% range in SA	PL	Category 1990	Category 2018	Criteria 2018	Type	EOO
	Gekkonidae	<i>Afroedura hawequensis</i>	499	Endemic	100	W	LC	LC		G	810
Squamates (lizards)											
	Gekkonidae	<i>Afroedura karroica</i>	23857	Endemic	100	W	LC	LC		G	23877
	Gekkonidae	<i>Afroedura langi</i>	3021	Near Endemic	90	W	LC	LC		G	3409
	Gekkonidae	<i>Afroedura leoloensis</i>	520	Endemic	100	N	LC	LC		G	520
	Gekkonidae	<i>Afroedura maripi</i>	734	Endemic	100	W	LC	LC		G	734
	Gekkonidae	<i>Afroedura marleyi</i>	21214	Not endemic	50	W	LC	LC		G	33109
	Gekkonidae	<i>Afroedura multiporis</i>	218	Endemic	100	W	LC	LC		G	646
	Gekkonidae	<i>Afroedura namaquensis</i>	482	Endemic	100	P	LC	LC		G	1766
	Gekkonidae	<i>Afroedura nivaria</i>	9514	Endemic	100	W	LC	LC		G	29448
	Gekkonidae	<i>Afroedura pienaari</i>	6364	Endemic	100	W	LC	LC		G	7976
	Gekkonidae	<i>Afroedura pondolia</i>	30925	Endemic	100	W	LC	LC		G	57209
	Gekkonidae	<i>Afroedura pongola</i>	NA	Endemic	100	N	DD	DD		G	0
	Gekkonidae	<i>Afroedura rondavelica</i>	NA	Endemic	100	P	DD	DD		G	0
	Gekkonidae	<i>Afroedura rupestris</i>	NA	Endemic	100	N	DD	DD		G	0
	Gekkonidae	<i>Afroedura tembulica</i>	2336	Endemic	100	N	LC	LC		G	2382
	Gekkonidae	<i>Afroedura transvaalica</i>	5395	Not endemic	10	W	LC	LC		N	13123
	Gekkonidae	<i>Afroedura waterbergensis</i>	177	Endemic	100	N	LC	LC		G	177
	Gekkonidae	<i>Afrogecko porphyreus</i>	66174	Endemic	100	W	LC	LC		G	122659
	Gekkonidae	<i>Chondrodactylus angulifer</i>	322452	Not endemic	25	W	LC	LC		N	448022
	Gekkonidae	<i>Chondrodactylus bibronii</i>	549461	Not endemic	50	W	LC	LC		N	676035
	Gekkonidae	<i>Chondrodactylus turneri</i>	224364	Not endemic	10	W	LC	LC		N	745402
	Gekkonidae	<i>Cryptactites peringueyi</i>	80	Endemic	100	N	VU	NT	B1a	G	785
	Gekkonidae	<i>Goggia braacki</i>	968	Endemic	100	W	LC	LC		G	1347
	Gekkonidae	<i>Goggia essexi</i>	9272	Endemic	100	W	LC	LC		G	14263

**Table S1**

Group	Family	Species	Range size	Endemic	% range in SA	PL	Category 1990	Category 2018	Criteria 2018	Type	EOO
	Gekkonidae	<i>Goggia gemmula</i>	1477	Not endemic	75	W	LC	LC		G	1736
Squamates (lizards)											
	Gekkonidae	<i>Goggia hewitti</i>	21459	Endemic	100	W	LC	LC		G	30015
	Gekkonidae	<i>Goggia hexapora</i>	16245	Endemic	100	W	LC	LC		G	20554
	Gekkonidae	<i>Goggia incognita</i>	50409	Endemic	100	W	LC	LC		G	82212
	Gekkonidae	<i>Goggia lineata</i>	99608	Near Endemic	90	W	LC	LC		G	189585
	Gekkonidae	<i>Goggia matzikamaensis</i>	834	Endemic	100	N	LC	LC		G	834
	Gekkonidae	<i>Goggia microlepidota</i>	8991	Endemic	100	W	LC	LC		G	11578
	Gekkonidae	<i>Goggia rupicola</i>	6967	Endemic	100	W	LC	LC		G	9372
	Gekkonidae	<i>Hemidactylus mabouia</i>	226143	Not endemic	10	W	LC	LC		N	560471
	Gekkonidae	<i>Homopholis arnoldi</i>	37278	Not endemic	10	W	LC	LC		N	9660
	Gekkonidae	<i>Homopholis mulleri</i>	5985	Endemic	100	W	LC	LC		G	238325
	Gekkonidae	<i>Homopholis wahlbergii</i>	199707	Near Endemic	90	W	LC	LC		G	232591
	Gekkonidae	<i>Lygodactylus bradfieldi</i>	86151	Not endemic	10	W	LC	LC		N	447365
	Gekkonidae	<i>Lygodactylus capensis</i>	322019	Not endemic	50	W	LC	LC		N	558176
	Gekkonidae	<i>Lygodactylus graniticolus</i>	1385	Endemic	100	P	LC	LC		G	1586
	Gekkonidae	<i>Lygodactylus incognitus</i>	1475	Endemic	100	P	LC	LC		G	1550
	Gekkonidae	<i>Lygodactylus methueni</i>	NA	Endemic	100	M	DD	DD		G	1999
	Gekkonidae	<i>Lygodactylus montiscaeruli</i>	456	Endemic	100	P	LC	LC		G	752
	Gekkonidae	<i>Lygodactylus nigropunctatus</i>	43320	Endemic	100	W	LC	LC		G	75827
	Gekkonidae	<i>Lygodactylus ocellatus</i>	79137	Endemic	100	W	LC	LC		G	95176
	Gekkonidae	<i>Lygodactylus soutpansbergensis</i>	4543	Endemic	100	M	LC	LC		G	6901
	Gekkonidae	<i>Lygodactylus stevensoni</i>	12671	Not endemic	10	W	LC	LC		N	37872
	Gekkonidae	<i>Lygodactylus waterbergensis</i>	3290	Endemic	100	W	LC	LC		G	3513
	Gekkonidae	<i>Pachydactylus affinis</i>	140160	Endemic	100	W	LC	LC		G	165247

**Table S1**

Group	Family	Species	Range size	Endemic	% range in SA	PL	Category 1990	Category 2018	Criteria 2018	Type	EOO
	Gekkonidae	<i>Pachydactylus amoenus</i>	8037	Endemic	100	W	LC	LC		G	8711
Squamates (lizards)											
	Gekkonidae	<i>Pachydactylus atorquatus</i>	2853	Endemic	100	W	LC	LC		G	2853
	Gekkonidae	<i>Pachydactylus austeni</i>	25891	Endemic	100	W	LC	LC		G	62907
	Gekkonidae	<i>Pachydactylus barnardi</i>	25228	Endemic	100	W	LC	LC		G	27727
	Gekkonidae	<i>Pachydactylus capensis</i>	856360	Not endemic	10	W	LC	LC		N	1061952
	Gekkonidae	<i>Pachydactylus carinatus</i>	6303	Not endemic	75	W	LC	LC		N	9191
	Gekkonidae	<i>Pachydactylus formosus</i>	22318	Endemic	100	W	LC	LC		G	24334
	Gekkonidae	<i>Pachydactylus geitje</i>	105146	Endemic	100	W	LC	LC		G	216024
	Gekkonidae	<i>Pachydactylus haackei</i>	6023	Not endemic	10	W	LC	LC		N	22587
	Gekkonidae	<i>Pachydactylus kladaroderma</i>	30203	Endemic	100	W	LC	LC		G	46373
	Gekkonidae	<i>Pachydactylus labialis</i>	46569	Endemic	100	W	LC	LC		G	56359
	Gekkonidae	<i>Pachydactylus latirostris</i>	133037	Not endemic	75	W	LC	LC		N	139013
	Gekkonidae	<i>Pachydactylus macrolepis</i>	14585	Endemic	100	W	LC	LC		G	15675
	Gekkonidae	<i>Pachydactylus maculatus</i>	324323	Near Endemic	90	W	LC	LC		G	534632
	Gekkonidae	<i>Pachydactylus mariquensis</i>	417216	Endemic	100	W	LC	LC		G	453216
	Gekkonidae	<i>Pachydactylus monicae</i>	1137	Not endemic	10	W	LC	LC		N	1425
	Gekkonidae	<i>Pachydactylus montanus</i>	17224	Not endemic	10	W	LC	LC		N	28711
	Gekkonidae	<i>Pachydactylus namaquensis</i>	20446	Near Endemic	90	W	LC	LC		G	25663
	Gekkonidae	<i>Pachydactylus oculatus</i>	146283	Endemic	100	W	LC	LC		G	209007
	Gekkonidae	<i>Pachydactylus punctatus</i>	143824	Not endemic	10	W	LC	LC		N	586948
	Gekkonidae	<i>Pachydactylus purcelli</i>	230114	Not endemic	75	W	LC	LC		N	280113
	Gekkonidae	<i>Pachydactylus rangei</i>	NA	Peripheral	0	NE	NE	NE		NE	0
	Gekkonidae	<i>Pachydactylus rugosus</i>	170878	Not endemic	25	W	LC	LC		N	224639
	Gekkonidae	<i>Pachydactylus tigrinus</i>	9850	Not endemic	10	W	LC	LC		N	10519

**Table S1**

Group	Family	Species	Range size	Endemic	% range in SA	PL	Category 1990	Category 2018	Criteria 2018	Type	EOO
	Gekkonidae	<i>Pachydactylus vansoni</i>	197213	Near Endemic	90	W	LC	LC		G	256088
Squamates (lizards)											
	Gekkonidae	<i>Pachydactylus visseri</i>	730	Not endemic	10	W	LC	LC		N	834
	Gekkonidae	<i>Pachydactylus wahlbergii</i>	53797	Not endemic	10	W	LC	LC		N	92070
	Gekkonidae	<i>Pachydactylus weberi</i>	75870	Endemic	100	W	LC	LC		G	83180
	Gekkonidae	<i>Phelsuma ocellata</i>	21337	Endemic	100	W	LC	LC		G	23586
	Gekkonidae	<i>Ptenopus garrulus</i>	445755	Not endemic	50	W	LC	LC		N	993087
	Gekkonidae	<i>Ramigekko swartbergensis</i>	831	Endemic	100	W	LC	LC		G	1675
	Gerrhosauridae	<i>Broadleysaurus major</i>	68310	Not endemic	10	W	LC	LC		N	102111
	Gerrhosauridae	<i>Cordylosaurus subtessellatus</i>	75440	Not endemic	25	W	LC	LC		N	229848
	Gerrhosauridae	<i>Gerrhosaurus auritus</i>	NA	Peripheral	0	NE	NE	NE		NE	0
	Gerrhosauridae	<i>Gerrhosaurus flavigularis</i>	572221	Not endemic	10	W	LC	LC		N	1172232
	Gerrhosauridae	<i>Gerrhosaurus intermedius</i>	49103	Not endemic	10	W	LC	LC		N	75755
	Gerrhosauridae	<i>Gerrhosaurus typicus</i>	112578	Endemic	100	W	LC	LC		G	306121
	Gerrhosauridae	<i>Matobosaurus validus</i>	167684	Not endemic	10	W	LC	LC		N	222023
	Gerrhosauridae	<i>Tetradactylus africanus</i>	61676	Endemic	100	W	LC	LC		G	92669
	Gerrhosauridae	<i>Tetradactylus breyeri</i>	58302	Endemic	100	W	LC	LC		G	96693
	Gerrhosauridae	<i>Tetradactylus eastwoodae</i>	0	Endemic	100	EX	EX	EX		G	Extinct
	Gerrhosauridae	<i>Tetradactylus fitsimonsi</i>	6207	Endemic	100	W	VU	VU	B1ab(i,iii)	G	10954
	Gerrhosauridae	<i>Tetradactylus seps</i>	115717	Endemic	100	W	LC	LC		G	449781
	Gerrhosauridae	<i>Tetradactylus tetradactylus</i>	200817	Endemic	100	W	LC	LC		G	256659
	Lacertidae	<i>Australolacerta australis</i>	6391	Endemic	100	W	LC	LC		G	9019
	Lacertidae	<i>Heliobolus lugubris</i>	249281	Not endemic	10	W	LC	LC		N	615788
	Lacertidae	<i>Ichnotropis capensis</i>	58122	Not endemic	10	W	LC	LC		N	154625
	Lacertidae	<i>Meroles ctenodactylus</i>	26406	Not endemic	50	W	LC	LC		N	29260

**Table S1**

Group	Family	Species	Range size	Endemic	% range in SA	PL	Category 1990	Category 2018	Criteria 2018	Type	EOO
	Lacertidae	<i>Meroles cuneirostris</i>	6123	Not endemic	10	W	LC	LC		N	6923
Squamates (lizards)											
	Lacertidae	<i>Meroles knoxii</i>	96477	Endemic	100	W	LC	LC		G	178408
	Lacertidae	<i>Meroles squamulosus</i>	372357	Not endemic	10	W	LC	LC		N	581295
	Lacertidae	<i>Meroles suborbitalis</i>	324235	Not endemic	50	W	LC	LC		N	433850
	Lacertidae	<i>Nucras caesicaudata</i>	NA	Peripheral	0	NE	NE	NE		NE	0
	Lacertidae	<i>Nucras holubi</i>	363593	Not endemic	75	W	LC	LC		N	548548
	Lacertidae	<i>Nucras intertexta</i>	426316	Not endemic	25	W	LC	LC		N	691933
	Lacertidae	<i>Nucras lalandii</i>	334423	Endemic	100	W	LC	LC		G	809123
	Lacertidae	<i>Nucras livida</i>	42481	Endemic	100	W	LC	LC		G	166221
	Lacertidae	<i>Nucras ornata</i>	121956	Not endemic	25	W	LC	LC		N	279227
	Lacertidae	<i>Nucras taeniolata</i>	12365	Endemic	100	W	LC	LC		G	15453
	Lacertidae	<i>Nucras tessellata</i>	262287	Not endemic	75	W	LC	LC		N	387241
	Lacertidae	<i>Pedioplanis burchelli</i>	340773	Endemic	100	W	LC	LC		G	531533
	Lacertidae	<i>Pedioplanis inornata</i>	104182	Not endemic	10	W	LC	LC		N	150376
	Lacertidae	<i>Pedioplanis laticeps</i>	270516	Endemic	100	W	LC	LC		G	292068
	Lacertidae	<i>Pedioplanis lineoocellata</i>	992807	Not endemic	25	W	LC	LC		N	1367031
	Lacertidae	<i>Pedioplanis namaquensis</i>	563241	Not endemic	25	W	LC	LC		N	678372
	Lacertidae	<i>Tropidosaura cottrelli</i>	4230	Not endemic	50	W	LC	LC		G	18858
	Lacertidae	<i>Tropidosaura essexi</i>	7745	Not endemic	75	W	LC	LC		G	21415
	Lacertidae	<i>Tropidosaura gularis</i>	42903	Endemic	100	W	LC	LC		G	64018
	Lacertidae	<i>Tropidosaura montana</i>	108675	Endemic	100	W	LC	LC		G	396283
	Lacertidae	<i>Vhembelacerta rupicola</i>	2156	Endemic	100	P	LC	LC		G	2724



Table S1

Group	Family	Species	Range size	Endemic	% range in SA	PL	Category 1990	Category 2018	Criteria 2018	Type	EOO
Squamates (lizards)											
	Scincidae	<i>Acontias albigularis</i>	NA	Endemic	100	M	DD	DD		G	0
	Scincidae	<i>Acontias breviceps</i>	43957	Endemic	100	W	LC	LC		G	59667
	Scincidae	<i>Acontias cregoi</i>	20747	Near Endemic	90	W	LC	LC		G	28296
	Scincidae	<i>Acontias fitsimensi</i>	1942	Endemic	100	W	LC	LC		N	1985
	Scincidae	<i>Acontias garipeensis</i>	19810	Not endemic	75	W	LC	LC		N	23938
	Scincidae	<i>Acontias gracilicauda</i>	394509	Endemic	100	W	LC	LC		G	434591
	Scincidae	<i>Acontias grayi</i>	3416	Endemic	100	Not	LC	LC		G	5259
	Scincidae	<i>Acontias kgalagadi</i>	NA	Not endemic	10	W	LC	LC		N	0
	Scincidae	<i>Acontias lineatus</i>	160616	Not endemic	10	W	LC	LC		N	184285
	Scincidae	<i>Acontias lineicauda</i>	9222	Endemic	100	W	LC	LC		G	11499
	Scincidae	<i>Acontias litoralis</i>	11101	Endemic	100	W	LC	LC		G	18603
	Scincidae	<i>Acontias meleagris</i>	48622	Endemic	100	W	LC	LC		G	64438
	Scincidae	<i>Acontias namaquensis</i>	16790	Endemic	100	W	LC	LC		G	17237
	Scincidae	<i>Acontias occidentalis</i>	175805	Not endemic	10	W	LC	LC		N	277191
	Scincidae	<i>Acontias orientalis</i>	124962	Endemic	100	W	LC	LC		G	139786
	Scincidae	<i>Acontias parietalis</i>	3627	Not endemic	25	W	LC	LC		N	3732
	Scincidae	<i>Acontias plumbeus</i>	138757	Not endemic	10	W	LC	LC		N	409560
	Scincidae	<i>Acontias poecilus</i>	NA	Endemic	100	M	DD	DD		G	0
	Scincidae	<i>Acontias richardi</i>	NA	Endemic	100	M	DD	DD		G	0
	Scincidae	<i>Acontias rieppeli</i>	2364	Endemic	100	W	NT	NT	B1b(iii)	G	2902
	Scincidae	<i>Acontias tristis</i>	32151	Endemic	100	W	LC	LC		G	60017
	Scincidae	<i>Acontias wakkerstroomensis</i>	NA	Endemic	100	Not	DD	DD		G	0
	Scincidae	<i>Cryptoblepharus africanus</i>	NA	Peripheral	0	NE	NE	NE		NE	0

**Table S1**

Group	Family	Species	Range size	Endemic	% range in SA	PL	Category 1990	Category 2018	Criteria 2018	Type	EOO
	Scincidae	<i>Mochlus sundevallii</i>	250524	Not endemic	10	W	LC	LC		N	467827
Squamates (lizards)											
	Scincidae	<i>Panaspis maculicollis</i>	61810	Not endemic	10	W	LC	LC		N	102444
	Scincidae	<i>Panaspis wahlbergi</i>	515617	Not endemic	10	W	LC	LC		N	617561
	Scincidae	<i>Scelotes anguineus</i>	6768	Endemic	100	W	LC	LC		G	10472
	Scincidae	<i>Scelotes arenicolus</i>	2833	Not endemic	25	W	LC	LC		N	3690
	Scincidae	<i>Scelotes bidigittatus</i>	53307	Endemic	100	W	LC	LC		G	90600
	Scincidae	<i>Scelotes bipes</i>	3199	Endemic	100	W	LC	LC		G	34174
	Scincidae	<i>Scelotes bourquini</i>	5033	Endemic	100	M	VU	VU	B1ab(i,iii,v)	G	5385
	Scincidae	<i>Scelotes caffer</i>	132417	Endemic	100	W	LC	LC		G	207874
	Scincidae	<i>Scelotes capensis</i>	2325	Not endemic	10	W	LC	LC		N	8218
	Scincidae	<i>Scelotes fitzsimonsi</i>	1997	Endemic	100	W	LC	LC		G	3368
	Scincidae	<i>Scelotes gronovii</i>	2951	Endemic	100	W	LC	LC		G	7245
	Scincidae	<i>Scelotes guentheri</i>	0	Endemic	100	EX	EX	EX		G	Extinct
	Scincidae	<i>Scelotes inornatus</i>	3	Endemic	100	Not	EN	CR	B1ab(i,ii,iii)	G	90
	Scincidae	<i>Scelotes kasneri</i>	4932	Endemic	100	M	NT	NT	B1b(iii)	G	8142
	Scincidae	<i>Scelotes limpoensis</i>	33728	Near Endemic	90	W	LC	LC		N	37633
	Scincidae	<i>Scelotes mirus</i>	67810	Near Endemic	90	W	LC	LC		G	85478
	Scincidae	<i>Scelotes montispectus</i>	313	Endemic	100	M	NT	NT	B1a	G	4143
	Scincidae	<i>Scelotes mossambicus</i>	54141	Not endemic	50	W	LC	LC		G	117338
	Scincidae	<i>Scelotes sexlineatus</i>	18303	Endemic	100	W	LC	LC		G	49262
	Scincidae	<i>Scelotes vestigifer</i>	1619	Endemic	100	W	LC	LC		G	2228
	Scincidae	<i>Trachylepis capensis</i>	1124768	Not endemic	25	W	LC	LC		N	1544927
	Scincidae	<i>Trachylepis damarana</i>	134976	Not endemic	10	W	LC	LC		N	165936
	Scincidae	<i>Trachylepis depressa</i>	23281	Not endemic	10	W	LC	LC		N	144633

Table S1

Group	Family	Species	Range size	Endemic	% range in SA	PL	Category 1990	Category 2018	Criteria 2018	Type	EOO
	Scincidae	<i>Trachylepis homalocephala</i>	374212	Endemic	100	W	LC	LC		G	1077159
Squamates (lizards)											
	Scincidae	<i>Trachylepis laevigata</i>	NA	Endemic	100	W	DD	DD		G	0
	Scincidae	<i>Trachylepis margaritifera</i>	188143	Not endemic	10	W	LC	LC		N	265734
	Scincidae	<i>Trachylepis occidentalis</i>	340193	Not endemic	25	W	LC	LC		N	598350
	Scincidae	<i>Trachylepis punctatissima</i>	510244	Not endemic	25	W	LC	LC		N	631174
	Scincidae	<i>Trachylepis punctulata</i>	189167	Not endemic	10	W	LC	LC		N	662361
	Scincidae	<i>Trachylepis sparsa</i>	88374	Not endemic	25	W	LC	LC		N	105611
	Scincidae	<i>Trachylepis spilogaster</i>	149420	Not endemic	25	W	LC	LC		N	304936
	Scincidae	<i>Trachylepis striata</i>	161207	Not endemic	10	W	LC	LC		N	326326
	Scincidae	<i>Trachylepis sulcata</i>	473781	Not endemic	50	W	LC	LC		N	585344
	Scincidae	<i>Trachylepis varia</i>	630015	Not endemic	10	W	LC	LC		N	747476
	Scincidae	<i>Trachylepis variegata</i>	492181	Not endemic	25	W	LC	LC		N	637485
	Scincidae	<i>Typhlosaurus caecus</i>	7914	Endemic	100	W	LC	LC		G	19353
	Scincidae	<i>Typhlosaurus lomiae</i>	723	Endemic	100	W	LC	LC		G	763
	Scincidae	<i>Typhlosaurus meyeri</i>	1395	Not endemic	10	W	LC	LC		N	1557
	Scincidae	<i>Typhlosaurus vermis</i>	7723	Endemic	100	W	LC	LC		G	9149
	Varanidae	<i>Varanus albigularis</i>	768995	Not endemic	10	W	LC	LC		N	1125104
	Varanidae	<i>Varanus niloticus</i>	603756	Not endemic	10	W	LC	LC		N	1164385

Table S1

Group	Family	Species	Range size	Endemic	% range in SA	PL	Category 1990	Category 2018	Criteria 2018	Type	EOO
Squamates (snakes)											
	Colubridae	<i>Crotaphopeltis hotamboeia</i>	758499	Not endemic	10	W	LC	LC		N	1128600
	Colubridae	<i>Dasypeltis inornata</i>	102479	Near Endemic	90	W	LC	LC		G	355824
	Colubridae	<i>Dasypeltis medici</i>	6076	Not endemic	10	W	LC	LC		N	10809
	Colubridae	<i>Dasypeltis scabra</i>	1267702	Not endemic	10	W	LC	LC		N	1559849
	Colubridae	<i>Dipsadoboa aulica</i>	44350	Not endemic	25	W	LC	LC		N	70778
	Colubridae	<i>Dispholidus typus</i>	625233	Not endemic	10	W	LC	LC		N	1244365
	Colubridae	<i>Meizodon semiornatus</i>	35466	Not endemic	10	W	LC	LC		N	54928
	Colubridae	<i>Philothamnus angolensis</i>	7968	Not endemic	10	W	LC	LC		N	10116
	Colubridae	<i>Philothamnus hoplogaster</i>	279516	Not endemic	10	W	LC	LC		N	721964
	Colubridae	<i>Philothamnus natalensis</i>	47625	Not endemic	75	W	LC	LC		N	130937
	Colubridae	<i>Philothamnus occidentalis</i>	347788	Near Endemic	90	W	LC	LC		G	803750
	Colubridae	<i>Philothamnus semivariegatus</i>	526104	Not endemic	10	W	LC	LC		N	1156721
	Colubridae	<i>Telescopus beetzii</i>	289895	Not endemic	50	W	LC	LC		N	348739
	Colubridae	<i>Telescopus semiannulatus</i>	370910	Not endemic	10	W	LC	LC		N	788056
	Colubridae	<i>Thelotornis capensis</i>	224629	Not endemic	25	W	LC	LC		N	407555
	Elapidae	<i>Aspidelaps lubricus</i>	408103	Not endemic	25	W	LC	LC		N	541258
	Elapidae	<i>Aspidelaps scutatus</i>	156067	Not endemic	10	W	LC	LC		N	426215
	Elapidae	<i>Dendroaspis angusticeps</i>	619	Not endemic	10	W	LC	VU		N	20840
	Elapidae	<i>Dendroaspis polylepis</i>	275200	Not endemic	10	W	LC	LC		N	826994
	Elapidae	<i>Elapsoidea boulengeri</i>	85132	Not endemic	10	W	LC	LC		N	234525
	Elapidae	<i>Elapsoidea sundevallii</i>	365799	Not endemic	50	W	LC	LC		N	852076
	Elapidae	<i>Hemachatus haemachatus</i>	392572	Near Endemic	90	W	LC	LC		G	810611
	Elapidae	<i>Hydrophis platurus</i>	NA	Peripheral	0	NE	NE	NE		NE	0

Table S1

Group	Family	Species	Range size	Endemic	% range in SA	PL	Category 1990	Category 2018	Criteria 2018	Type	EOO
	Elapidae	<i>Naja annulifera</i>	275030	Not endemic	25	W	LC	LC		N	483993
Squamates (snakes)											
	Elapidae	<i>Naja mossambica</i>	273186	Not endemic	10	W	LC	LC		N	416202
	Elapidae	<i>Naja nigricincta</i>	148722	Not endemic	25	W	LC	LC		N	246648
	Elapidae	<i>Naja nivea</i>	752148	Not endemic	50	W	LC	LC		N	952492
	Elapidae	<i>Naja subfulva</i>	25366	Not endemic	10	W	LC	LC		N	127499
	Lamprophiidae	<i>Amblyodipsas concolor</i>	43066	Endemic	100	W	LC	LC		G	149340
	Lamprophiidae	<i>Amblyodipsas microphthalmalma</i>	16622	Not endemic	10	W	LC	LC		N	105701
	Lamprophiidae	<i>Amblyodipsas polylepis</i>	141408	Not endemic	10	W	LC	LC		N	316897
	Lamprophiidae	<i>Amblyodipsas ventrimaculata</i>	NA	Peripheral	0	NE	NE	NE		NE	0
	Lamprophiidae	<i>Amplorhinus multimaculatus</i>	136171	Near Endemic	90	W	LC	LC		G	737259
	Lamprophiidae	<i>Aparallactus capensis</i>	544279	Not endemic	10	W	LC	LC		N	779042
	Lamprophiidae	<i>Aparallactus lunulatus</i>	41190	Not endemic	10	W	LC	LC		N	60077
	Lamprophiidae	<i>Atractaspis bibronii</i>	428393	Not endemic	10	W	LC	LC		N	821992
	Lamprophiidae	<i>Atractaspis duerdeni</i>	22736	Not endemic	50	W	LC	LC		N	114107
	Lamprophiidae	<i>Boaedon capensis</i>	1257893	Not endemic	10	W	LC	LC		N	1460917
	Lamprophiidae	<i>Dipsina multimaculata</i>	335024	Not endemic	25	W	LC	LC		N	624731
	Lamprophiidae	<i>Duberria lutrix</i>	611272	Not endemic	10	W	LC	LC		N	979614
	Lamprophiidae	<i>Duberria variegata</i>	11981	Not endemic	10	W	LC	LC		N	13850
	Lamprophiidae	<i>Gracililima nyassae</i>	172818	Not endemic	10	W	LC	LC		N	298763
	Lamprophiidae	<i>Hemirhagerrhis nototaenia</i>	75579	Not endemic	10	W	LC	LC		N	185883
	Lamprophiidae	<i>Homoroselaps dorsalis</i>	105788	Near Endemic	90	W	LC	LC		G	323775
	Lamprophiidae	<i>Homoroselaps lacteus</i>	441983	Endemic	100	W	LC	LC		G	1230999
	Lamprophiidae	<i>Inyoka swazicus</i>	13498	Endemic	100	W	LC	LC		G	47404
	Lamprophiidae	<i>Lamprophis aurora</i>	635167	Endemic	100	W	LC	LC		G	922775

Table S1

Group	Family	Species	Range size	Endemic	% range in SA	PL	Category 1990	Category 2018	Criteria 2018	Type	EOO
	Lamprophiidae	<i>Lamprophis fiskii</i>	91042	Endemic	100	W	LC	LC		G	188667
Squamates (snakes)											
	Lamprophiidae	<i>Lamprophis fuscus</i>	252634	Endemic	100	W	LC	LC		G	650061
	Lamprophiidae	<i>Lamprophis guttatus</i>	459594	Endemic	100	W	LC	LC		G	1190289
	Lamprophiidae	<i>Limaformosa capensis</i>	158302	Not endemic	10	W	LC	LC		N	346891
	Lamprophiidae	<i>Lycodonomorphus inornatus</i>	247445	Endemic	100	W	LC	LC		G	1014248
	Lamprophiidae	<i>Lycodonomorphus laevisimus</i>	190375	Endemic	100	W	LC	LC		G	466224
	Lamprophiidae	<i>Lycodonomorphus obscuriventris</i>	19089	Not endemic	25	W	LC	LC		N	39111
	Lamprophiidae	<i>Lycodonomorphus rufulus</i>	656983	Not endemic	10	W	LC	LC		N	1048481
	Lamprophiidae	<i>Lycophidion capense</i>	787453	Not endemic	10	W	LC	LC		N	1233833
	Lamprophiidae	<i>Lycophidion pygmaeum</i>	14064	Endemic	100	W	LC	LC		G	19684
	Lamprophiidae	<i>Lycophidion variegatum</i>	102513	Not endemic	10	W	LC	LC		N	176711
	Lamprophiidae	<i>Macrelaps microlepidotus</i>	82777	Endemic	100	W	LC	LC		G	122941
	Lamprophiidae	<i>Montaspis gilvamaculata</i>	NA	Endemic	100	W	DD	DD		G	0
	Lamprophiidae	<i>Prosymna bivittata</i>	388468	Not endemic	10	W	LC	LC		N	768114
	Lamprophiidae	<i>Prosymna frontalis</i>	57169	Not endemic	10	W	LC	LC		N	91714
	Lamprophiidae	<i>Prosymna janii</i>	1999	Not endemic	50	W	LC	LC		N	4100
	Lamprophiidae	<i>Prosymna lineata</i>	94326	Not endemic	10	W	LC	LC		N	149049
	Lamprophiidae	<i>Prosymna stuhlmannii</i>	129032	Not endemic	10	W	LC	LC		N	224832
	Lamprophiidae	<i>Prosymna sundevallii</i>	878591	Endemic	100	W	LC	LC		G	1141530
	Lamprophiidae	<i>Psammophis angolensis</i>	153190	Not endemic	10	W	LC	LC		N	162475
	Lamprophiidae	<i>Psammophis brevirostris</i>	430943	Not endemic	50	W	LC	LC		N	670371
	Lamprophiidae	<i>Psammophis crucifer</i>	736173	Near Endemic	90	W	LC	LC		G	1275138
	Lamprophiidae	<i>Psammophis jallae</i>	67310	Not endemic	10	W	LC	LC		N	68094
	Lamprophiidae	<i>Psammophis leightoni</i>	11250	Endemic	100	W	LC	LC		G	17815

Table S1

Group	Family	Species	Range size	Endemic	% range in SA	PL	Category 1990	Category 2018	Criteria 2018	Type	EOO
	Lamprophiidae	<i>Psammophis mossambicus</i>	145058	Not endemic	10	W	LC	LC		N	211003
Squamates (snakes)											
	Lamprophiidae	<i>Psammophis namibensis</i>	22860	Not endemic	25	W	LC	LC		N	26420
	Lamprophiidae	<i>Psammophis notostictus</i>	656208	Not endemic	50	W	LC	LC		N	821900
	Lamprophiidae	<i>Psammophis subtaeniatus</i>	222893	Not endemic	10	W	LC	LC		N	281743
	Lamprophiidae	<i>Psammophis trigrammus</i>	1311	Not endemic	10	W	LC	LC		N	1332
	Lamprophiidae	<i>Psammophis trinasalis</i>	474204	Not endemic	25	W	LC	LC		N	658624
	Lamprophiidae	<i>Psammophylax rhombeatus</i>	855350	Near Endemic	90	W	LC	LC		N	1324057
	Lamprophiidae	<i>Psammophylax tritaeniatus</i>	530753	Not endemic	10	W	LC	LC		N	414508
	Lamprophiidae	<i>Pseudaspis cana</i>	1078882	Not endemic	10	W	LC	LC		N	1551502
	Lamprophiidae	<i>Rhamphiophis rostratus</i>	50283	Not endemic	10	W	LC	LC		N	65171
	Lamprophiidae	<i>Xenocalamus bicolor</i>	259381	Not endemic	10	W	LC	LC		N	781169
	Lamprophiidae	<i>Xenocalamus sabiensis</i>	NA	Peripheral	0	NE	NE	NE		NE	0
	Lamprophiidae	<i>Xenocalamus transvaalensis</i>	13067	Near Endemic	90	W	LC	LC		G	63221
	Leptotyphlopidae	<i>Leptotyphlops distanti</i>	123692	Endemic	100	W	LC	LC		G	243299
	Leptotyphlopidae	<i>Leptotyphlops incognitus</i>	175346	Not endemic	10	W	LC	LC		N	246548
	Leptotyphlopidae	<i>Leptotyphlops jacobseni</i>	13544	Endemic	100	W	LC	LC		G	24870
	Leptotyphlopidae	<i>Leptotyphlops nigricans</i>	143157	Endemic	100	W	LC	LC		G	228660
	Leptotyphlopidae	<i>Leptotyphlops scutifrons</i>	722089	Not endemic	10	W	LC	LC		N	883807
	Leptotyphlopidae	<i>Leptotyphlops sylvicolus</i>	6358	Endemic	100	W	LC	LC		G	46666
	Leptotyphlopidae	<i>Leptotyphlops telloi</i>	NA	Peripheral	0	NE	NE	NE		NE	0
	Leptotyphlopidae	<i>Myriopholis longicauda</i>	86726	Not endemic	10	W	LC	LC		N	125899
	Leptotyphlopidae	<i>Namibiana gracilior</i>	40998	Endemic	100	W	LC	LC		G	59799
	Leptotyphlopidae	<i>Namibiana occidentalis</i>	6934	Not endemic	10	W	LC	LC		N	26160
	Natricidae	<i>Natriciteres olivacea</i>	NA	Peripheral	0	NE	NE	NE		NE	0

**Table S1**

Group	Family	Species	Range size	Endemic	% range in SA	PL	Category 1990	Category 2018	Criteria 2018	Type	EOO
	Natricidae	<i>Natriciteres sylvatica</i>	2631	Not endemic	10	W	LC	LC		N	3434
<b>Squamates (snakes)</b>											
	Pythonidae	<i>Python natalensis</i>	338317	Not endemic	10	W	LC	LC		N	830833
	Typhlopidae	<i>Afrotyphlops bibronii</i>	444423	Endemic	100	W	LC	LC		G	736824
	Typhlopidae	<i>Afrotyphlops fomasinii</i>	9496	Not endemic	25	W	LC	LC		N	10756
	Typhlopidae	<i>Afrotyphlops mucruso</i>	24534	Not endemic	10	W	LC	LC		N	43690
	Typhlopidae	<i>Afrotyphlops schlegelii</i>	138889	Not endemic	10	W	LC	LC		N	212830
	Typhlopidae	<i>Indotyphlops braminus</i>	NA	Introduced	0	NE	NE	NE		NE	0
	Typhlopidae	<i>Rhinotyphlops lalandei</i>	1085675	Not endemic	25	W	LC	LC		N	1550999
	Typhlopidae	<i>Rhinotyphlops schinzi</i>	182427	Not endemic	25	W	LC	LC		N	299305
	Viperidae	<i>Bitis albanica</i>	610	Endemic	100	P	EN	EN	B1ab(i,iii,iv,v)	G	795
	Viperidae	<i>Bitis arietans</i>	1267702	Not endemic	10	W	LC	LC		N	1559849
	Viperidae	<i>Bitis armata</i>	1775	Endemic	100	W	NT	VU	B1ab(i,ii,iii,iv,v)	G	17641
	Viperidae	<i>Bitis atropos</i>	98939	Endemic	100	W	LC	LC		G	743264
	Viperidae	<i>Bitis caudalis</i>	532110	Not endemic	50	W	LC	LC		N	1091702
	Viperidae	<i>Bitis cornuta</i>	55223	Not endemic	50	W	LC	LC		N	68984
	Viperidae	<i>Bitis gabonica</i>	3395	Not endemic	10	W	LC	LC		N	7202
	Viperidae	<i>Bitis inornata</i>	NA	Endemic	100	Not	DD	DD		G	0
	Viperidae	<i>Bitis rubida</i>	27859	Endemic	100	W	LC	LC		G	56924
	Viperidae	<i>Bitis schneideri</i>	6144	Not endemic	50	W	NT	NT	B2ab(ii,iii)	N	12805
	Viperidae	<i>Bitis xeropaga</i>	10183	Not endemic	25	W	LC	LC		N	31357
	Viperidae	<i>Causus defilippii</i>	175603	Not endemic	10	W	LC	LC		N	285856
	Viperidae	<i>Causus rhombeatus</i>	351510	Not endemic	10	W	LC	LC		N	810348



Table S2. Threatened and Near Threatened reptiles from South Africa, with details of IUCN threat status for 1990 (backcasted) and 2018 and criteria as of 2018, with category change noted. Also given is the type of assessment (N-National, G-Global), the range size based on the interpreted distribution (km<sup>2</sup>), the Extent of Occurrence (EOO, km<sup>2</sup>), the size of the range under formal protection and the protection level (Well Protected, Moderately Protected, Poorly Protected and Not Protected). 'Protection Level for species with distribution sizes less than 100 km<sup>2</sup> are based on the proportion of the range under protected.

Table S2

Group	Family	Species	Endemic	Category 1990	Category 2018	Criteria 2018	Change	Type	Range size	EOO	Area Conserved	Protection Level
Chelonians												
	Pelomedusidae	<i>Pelusios castanoides</i>	Not endemic	LC	VU	A4ac	LC to VU	N	3364	7236	1585	Well
	Pelomedusidae	<i>Pelusios rhodesianus</i>	Not endemic	LC	VU	A4ace	LC to VU	N	2809	7363	466	Well
	Testudinidae	<i>Chersobius boulengeri</i>	Endemic	LC	EN	A4ace	LC to EN	G	59749	135090	1384	Well
	Testudinidae	<i>Chersobius signatus</i>	Endemic	NT	EN	A4ace	NT to EN	G	28074	93678	1199	Well
	Testudinidae	<i>Kinixys lobatsiana</i>	Endemic	NT	VU	A4cde	LC to VU	G	44443	93017	3484	Well
	Testudinidae	<i>Kinixys natalensis</i>	Endemic	NT	VU	A4c	NT to VU	G	37736	104235	3989	Well
	Testudinidae	<i>Psammobates geometricus</i>	Endemic	EN	CR	A4ace	EN to CR	G	167	2827	0	Not
	Testudinidae	<i>Psammobates tentorius</i>	Endemic	LC	NT	A4ce	LC to NT	G	480476	627403	11454	Well

Table S2

Group	Family	Species	Endemic	Category 1990	Category 2018	Criteria 2018	Change	Type	Range size	EOO	Area Conserved	Protection Level
Crocodilians												
	Crocodylidae	<i>Crocodylus niloticus</i>	Not endemic	LC	VU	A2ac	LC to VU	N	133828	318585	25538	Well
Squamates (lizards)												
	Chamaeleonidae	<i>Bradypodion caeruleogula</i>	Endemic	EN	EN	B1ab(i,ii,iii)+2ab(i,ii,iii)		G	44	227	27	Well <sup>1</sup>
	Chamaeleonidae	<i>Bradypodion caffer</i>	Endemic	EN	EN	B1ab(i,ii,iii,iv,v)+2ab(i,ii,iii,iv,v)		G	89	255	2	Not
	Chamaeleonidae	<i>Bradypodion dracomontanum</i>	Endemic	LC	NT	B1b(iii)	LC to NT	G	2339	7897	467	Well
	Chamaeleonidae	<i>Bradypodion kentanicum</i>	Endemic	NT	NT	B1b(i,ii,iii)		G	2776	2988	50	Poorly
	Chamaeleonidae	<i>Bradypodion melanocephalum</i>	Endemic	NT	NT	B1b(iii)		G	8957	17401	58	Moderately
	Chamaeleonidae	<i>Bradypodion nemorale</i>	Endemic	NT	NT	B2b(iii)		G	39	184	33	Well <sup>1</sup>
	Chamaeleonidae	<i>Bradypodion ngomeense</i>	Endemic	NT	NT	B1b(iii)+2b(iii)		G	26	47	17	Well <sup>1</sup>
	Chamaeleonidae	<i>Bradypodion pumilum</i>	Endemic	NT	NT	B2b(iii)		G	8165	11519	1295	Well

Table S2

Group	Family	Species	Endemic	Category 1990	Category 2018	Criteria 2018	Change	Type	Range size	EOO	Area Conserved	Protection Level
	Chamaeleonidae	<i>Bradypodion thamnobates</i>	Endemic	VU	EN	B1ab(iii,v)	VU to EN	G	3295	3929	14	Poorly
Squamates (lizards)												
	Cordylidae	<i>Hemicordylus nebulosus</i>	Endemic	VU	VU	D2		G	10	10	10	Well <sup>1</sup>
	Cordylidae	<i>Platysaurus monotropis</i>	Endemic	NT	NT	B1b(iii)		G	641	943	0	Not
	Cordylidae	<i>Smaug giganteus</i>	Endemic	VU	VU	A2bcd+4bcd		G	17950	37617	0	Not
	Gekkonidae	<i>Cryptactites peringueyi</i>	Endemic	VU	NT	B1a	VU to NT	G	80	785	0	Not
	Gerrhosauridae	<i>Tetradactylus eastwoodae</i>	Endemic	EX	EX			G	0	Extinct	0	Extinct
	Gerrhosauridae	<i>Tetradactylus fitzsimonsi</i>	Endemic	VU	VU	B1ab(i,iii)		G	6207	10954	1676	Well
	Scincidae	<i>Acontias rieppeli</i>	Endemic	NT	NT	B1b(iii)		G	2364	2902	311	Well
	Scincidae	<i>Scelotes bourquini</i>	Endemic	VU	VU	B1ab(i,iii,v)		G	5033	5385	50	Moderately
	Scincidae	<i>Scelotes guentheri</i>	Endemic	EX	EX			G	0	Extinct	0	Extinct
	Scincidae	<i>Scelotes inornatus</i>	Endemic	EN	CR	B1ab(i,ii,iii)	EN to CR	G	3	90	0	Not

**Table S2**

Group	Family	Species	Endemic	Category 1990	Category 2018	Criteria 2018	Change	Type	Range size	EOO	Area Conserved	Protection Level
	Scincidae	<i>Scelotes kasneri</i>	Endemic	NT	NT	B1b(iii)		G	4932	8142	73	Moderately
Squamates (lizards)												
	Scincidae	<i>Scelotes montispectus</i>	Endemic	NT	NT	B1a		G	313	4143	84	Moderately
Squamates (snakes)												
	Elapidae	<i>Dendroaspis angusticeps</i>	Not endemic	LC	VU	B2ab(ii,iii,iv,v)	LC to VU	N	619	20840	390	Well
	Viperidae	<i>Bitis albanica</i>	Endemic	EN	EN	B1ab(i,iii,iv,v)		G	610	795	5	Poorly
	Viperidae	<i>Bitis armata</i>	Endemic	NT	VU	B1ab(i,ii,iii,iv,v)	NT to VU	G	1775	17641	608	Well
	Viperidae	<i>Bitis schneideri</i>	Not endemic	NT	NT	B2ab(ii,iii)		N	6144	12805	736	Well