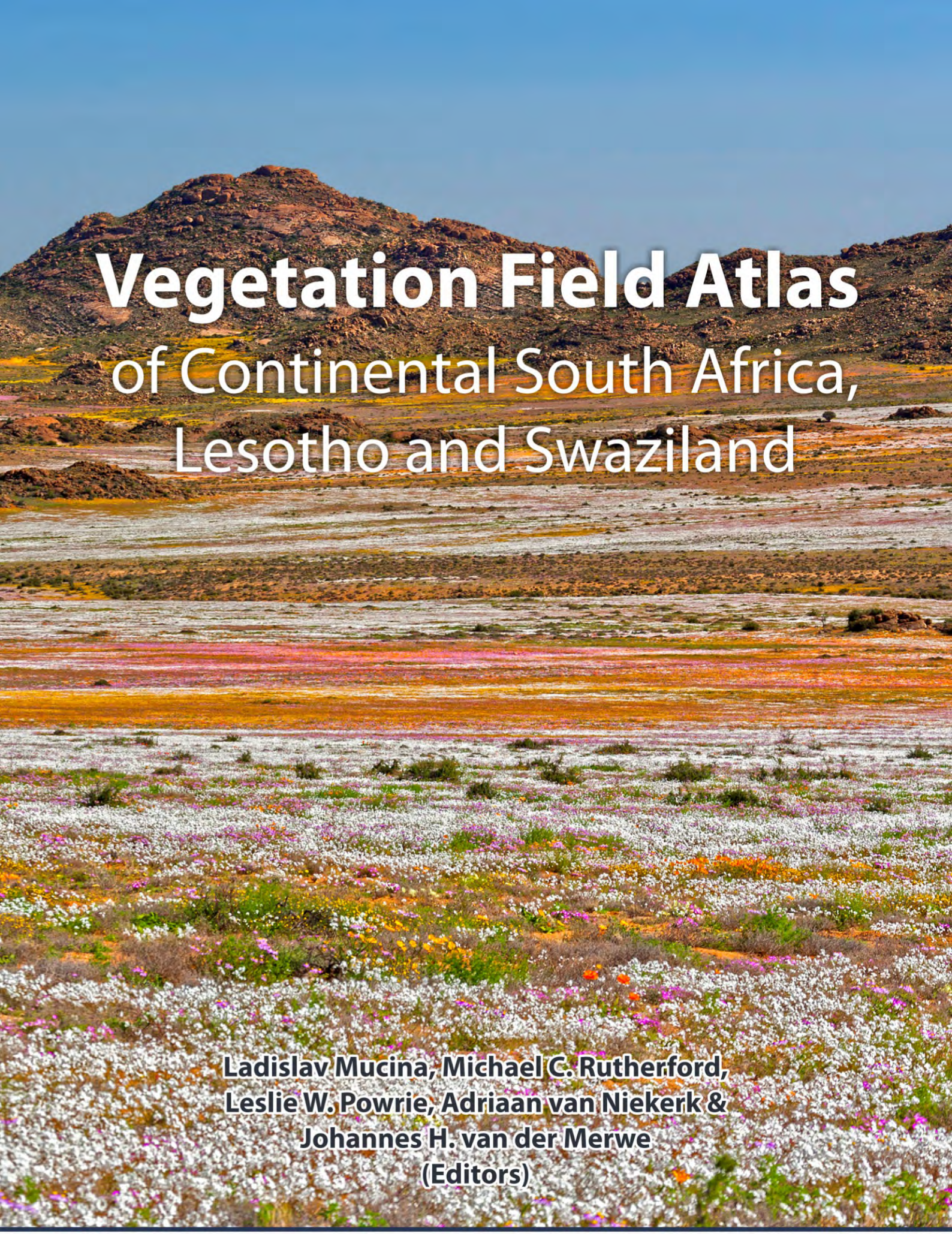


Vegetation Field Atlas of Continental South Africa, Lesotho and Swaziland

Ladislav Mucina, Michael C. Rutherford,
Leslie W. Powrie, Adriaan van Niekerk &
Johannes H. van der Merwe
(Editors)

Strelitzia 33



Prof. Ladislav Mucina

Ladislav (Laco) Mucina was born on 28 May 1956 in Piešťany (then Czechoslovakia, today Slovakia) and received his education in Slovakia, where he obtained various scientific degrees and pedagogical qualifications at the Comenius University and Slovak Academy of Sciences, both in Bratislava, and later at the Technical University Berlin. He spent a postdoctoral period at the University of Nijmegen in the Netherlands and later lectured at universities in Austria, Germany, Italy, Sweden, Kuwait, South Africa (Pretoria, QwaQwa, Stellenbosch) and Australia. Currently he serves as Winthrop Professor and the Iluka Chair in Vegetation Science and Biogeography at the University of Western Australia, Perth. Recently he had been appointed as Professor Extraordinaire at the Department of Geography and Environmental Studies of Stellenbosch University. Prof. Mucina is a long-serving member of executive and advisory bodies and working groups of the International Association for Vegetation Science (IAVS). He is co-founder of the journal *Applied Vegetation Science* and former Chief Editor of the *Journal of Vegetation Science*. In South Africa he founded the National Vegetation Database and participated in management of the National Vegetation Mapping project. Prof. Mucina is working on a wide range of botanical research topics, including vegetation science (vegetation surveys, mapping, data-banking), population and evolutionary biology, plant systematics and biogeography. He has participated in the vegetation survey of Slovakia and Austria, and Europe, studied vegetation patterning and population ecology of Central European dry grasslands, contributed to syntaxonomic calibration of the EUNIS habitat system of the European Union, and participated in several crucial studies into ecology and conservation of indigenous forests. At present he pursues research in vegetation mapping in Western Australia and is active in functional and evolutionary community ecology focusing on rehabilitation processes in species-rich shrublands and general vegetation dynamics.



Dr Michael C. Rutherford

Michael Rutherford, born on 28 May 1947 in Durban, obtained his PhD in botany from Stellenbosch University. His early vegetation studies were conducted in savannas of northern Namibia and the Limpopo Province of South Africa where he was a project leader of the South African Savanna Ecosystem Project at Nylsvley while employed by the former Botanical Research Institute (BRI) in Pretoria. He was head of the Stress Ecology Research Group of the BRI and later the National Botanical Institute (NBI), based at the University of Cape Town. In 1995, he was appointed Chief Specialist Scientist at the NBI and later the South African National Biodiversity Institute (SANBI) at the Kirstenbosch Research Centre, and served on the executive of the NBI for several years. His research has spanned primary production ecology, ecophysiology, ecological impacts of invasive alien plants, pollution and allelochemical effects, biodiversity conservation and land transformation, modelling the impact of climate change on plant diversity, and vegetation mapping. He is first author of the well-known work *Biomes of southern Africa*, the second edition published in 1994. More recently, before his retirement from SANBI in 2012, he led the publication of a heptalogy of papers on the impacts of herbivore-driven land degradation on plant diversity across the rangeland biomes of South Africa. He received a British Council award for study in the United Kingdom and accepted research fellowships in Germany. He is an alumnus of the International Institute for Applied Systems Analysis (IIASA) in Austria. Currently resident in the Peak District of the United Kingdom, he remains a Research Associate of the Department of Botany and Zoology at Stellenbosch University and he continues to make inputs into southern African ecological research.

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SANBI
Biodiversity for Life
South African National Biodiversity Institute

Pretoria
2014

STRELITZIA

This series has replaced *Memoirs of the Botanical Survey of South Africa* and *Annals of the Kirstenbosch Botanic Gardens*, which SANBI inherited from its predecessor organisations.

The plant genus *Strelitzia* occurs naturally in the eastern parts of southern Africa. It comprises three arborescent species, known as wild bananas, and two acaulescent species, known as crane flowers or bird-of-paradise flowers. Part of the logo of the South African National Biodiversity Institute is based on the striking inflorescence of *Strelitzia reginae*, a native of the Eastern Cape and KwaZulu-Natal that has become a garden favourite worldwide. It symbolises the commitment of the Institute to champion the exploration, conservation, sustainable use, appreciation, and enjoyment of South Africa's exceptionally rich biodiversity for all people.

Ladislav Mucina[1,2,3,4,5], Michael C. Rutherford[2,4], Leslie W. Powrie[4], Adriaan van Niekerk[5] & Johannes H. van der Merwe[5] (Editors)

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We dedicate this Atlas to the memory of C. Robert Scott-Shaw (1953–2012), one of the key members of the Team of the Vegetation Map of South Africa, Lesotho and Swaziland, who spent his life in serving botany and nature conservation in his beloved home province – KwaZulu-Natal

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Introduction

Why this Atlas?

The publication of the *Vegetation of South Africa, Lesotho and Swaziland* (known among peers as 'the VegMap'), edited by Laco Mucina & Mike Rutherford, and assisted by Les Powrie and about 100 other co-authors, marked a milestone on a long journey laid down by South African vegetation science and plant ecology (Mucina & Rutherford 2006a). The classification of South Africa's terrestrial ecosystems and featuring the diversity of vegetation types on a map resulted in a resource now widely used not only by botanists, vegetation scientists and plant ecologists, but also by users of botanical, vegetation and ecological information including those involved in zoology, other biological sciences, tertiary education, environmental consulting, nature conservation, and policy-making. Since its publication in 2006 (although the book became available only in early 2007) the book describing the vegetation of South Africa accrued more than 1 200 citations (and counting, according to Google Search), or 153+ citations per year (*Publish or Perish* [computer program] 1 March 2014). What then, is the role of this 'Atlas', which reprints Chapter 18 of the VegMap (Mucina et al. 2006) – the vegetation map itself?

The reason for producing the field atlas is that the VegMap book as a tool has two major drawbacks: It is heavy (over 3.8 kg) and delicate (printed on high-quality, heavy paper, but poorly resistant to water). Thus it is not well-suited to handling in the field and under wet conditions. The Atlas, consisting of thirty-one pages of the map itself and eight pages of legend and printed on tear- and waterproof 240 g/m^2 Rock Paper, should become a welcome companion to each field-based researcher. This should boost the use of the vegetation map and allow errors or omissions to be more easily detected; resulting in further improvements to the vegetation map.

The map work included in this Atlas is based on Chapter 18 of the abovementioned *Vegetation of South Africa, Lesotho and Swaziland* (Mucina & Rutherford 2006a). No conceptual changes have been made to the contents of this Atlas as yet. We have, however, added a map of the Cape Peninsula at a scale of approximately 1:200 000 (see page 47) that features one new vegetation unit (FFh 11 Peninsula Shale Fynbos) to demonstrate that vegetation mapping in South Africa has not come to a halt, and that new information is still being incorporated (see also http://www.sanbi.org.za and search for 'vegetation map updates'). Height contours above sea level (isohypses) have been added to emphasise the rugged regional topography and to test this layer for informative power at finer mapping scales.

The vegetation maps of the Prince Edward Islands (see Smith & Mucina 2006) have not been included since we understand that a new, more detailed mapping (using high-precision satellite imagery and extensive ground-truthing) should be implemented in the near future. This unique part of South African nature deserves separate attention.

How to use this Atlas

The Atlas is presented here as a systematic series of A4 maps. These depict 435 of the vegetation types of our sub-continental region. Not depicted in this edition is 'AZm 1 Cape Kelp Beds', described in Mucina & Rutherford (2006a), yet not depicted by any of the mapping products resulting from the VegMap project due to lack of reliable field data. Mapping of marine, riverine and aquatic ecosystems is being undertaken as part of the further development of South Africa's National Ecosystem Classification System, which underpins a range of ecosystem-level planning, assessment and monitoring (Driver et al. 2012; SANBI 2013).

The mapping in this chapter corresponds closely to the large 1:1 000 000 wall map of Mucina et al. (2005, 2007) and is printed at this same convenient scale. Grey outlines around polygons help to differentiate between adjacent vegetation units.

The A4 map pages include an area of overlap at the edges with adjacent maps and contain navigational arrows to the adjacent sections of the map. The series of maps is preceded by an index map giving the page numbers of the atlas as well as the legend to the vegetation types with the colours and codes shown on the map.

Given the large number of colours required for the Atlas, the codes provide the definitive identity of vegetation types. For convenience this legend is reprinted as a separate booklet in a sleeve within the back cover of the book (Mucina & Rutherford 2006a). Geographical names approved by the South African Geographical Names Council and gazetted before 1 January 2005 have been used.

Associated text and electronic files

This Atlas does not immediately serve the purpose of informing the user about the full nature of the mapping units. This is the task of the interpretative manual (Mucina & Rutherford 2006a), which, among other aspects, features the detailed description of each mapping unit. This 'meta-information' about the mapping units also included a compact disc (Mucina & Rutherford 2006b), containing the GIS (Geographical Information Systems) shape files of the map in a sleeve on the inside front cov-

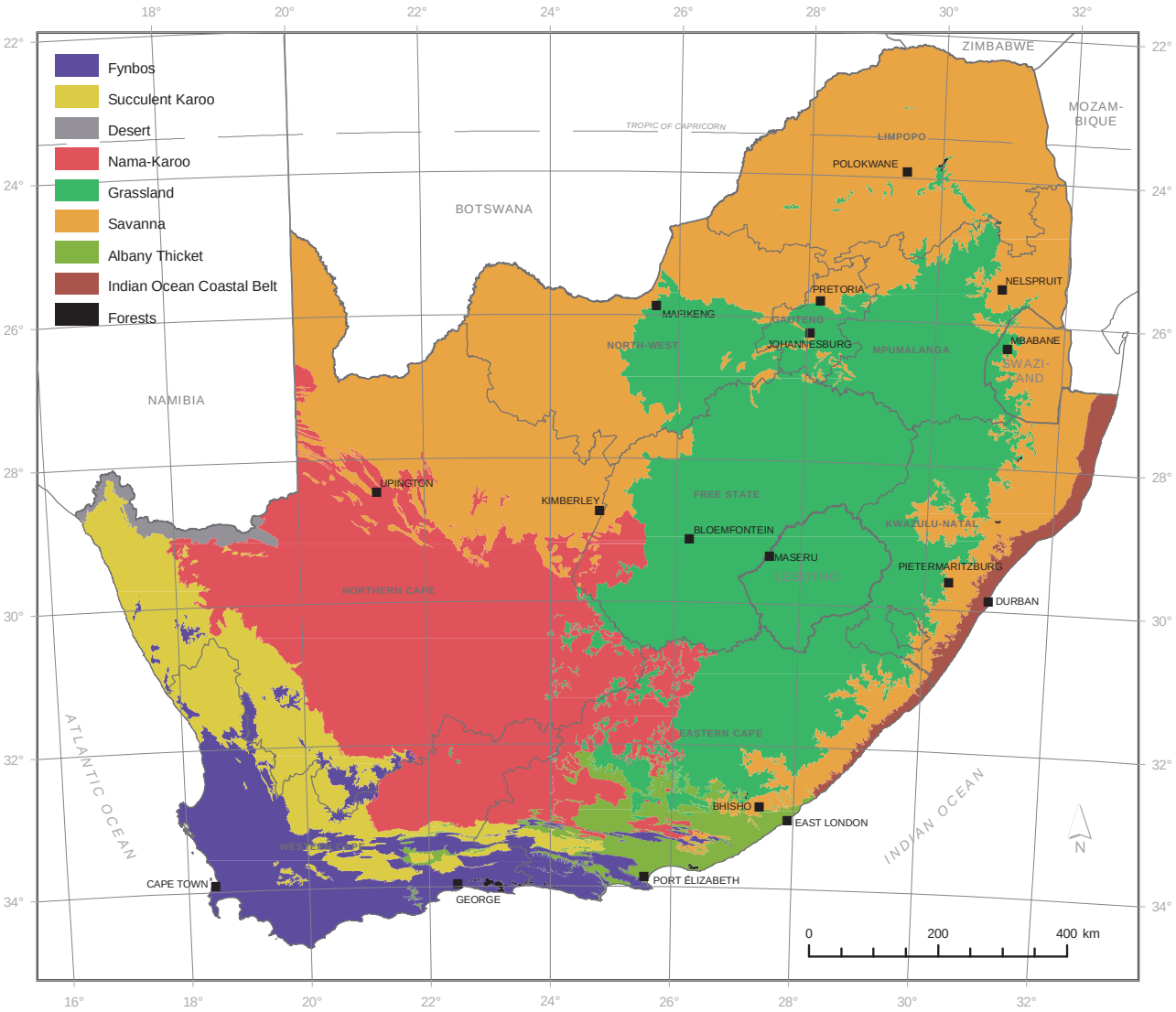


Figure 1 Biomes of South Africa, Lesotho and Swaziland.

er of the book (Mucina & Rutherford 2006a). Later this book and the new version of the CD were released in a double-CD format (Mucina & Rutherford 2010). The CD featuring the vegetation map shape files also contains ArcView, ArcGIS and ArcExplorer mapping projects, and software (ArcReader and ArcExplorer) suitable for viewing the map on a computer. This is a particularly valuable and effective means of zooming in to view very small polygons and intricately divided vegetation types that are difficult to see on the printed maps, as well as for overlaying personal GPS positions and other spatial data on the map. Some attributes are displayed when clicking on a polygon in the electronic map, including the code used in the book; name of the vegetation type; conservation target; percentage of the vegetation type that is protected; percentage of the vegetation type that is unaltered; conservation status and protection status of the vegetation type; area in square kilometres of the vegetation type; area in square kilometres of the specific polygon; code without space used on the map; sort order (using numbers for biome, bioregion and vegetation type); codes and names for biome, group and bioregion; and IDs for vegetation type, biome, group and bioregion used for linking data tables.

For display purposes, the vegetation map was published in wall-poster format (four separate sheets in 1:1 000 000 scale) in two editions (Mucina et al. 2005, 2007). The maps of biomes (Figure 1) and bioregions (Figure 2) were produced, appropriately, at much less detailed scales and are to be found in Chapter 3 of Rutherford et al. (2006a).

Credits

Credits of work underpinning the mapping efforts are detailed in the individual major chapters (Chapter 4 through Chapter 14, and with organisation affiliations in Chapter 1 of Mucina & Rutherford (2006a)) and are therefore not repeated here. The order of the editors and the contributing authors follows the volume of contribution towards the definition of the vegetation mapping concepts and the extent of their mapping area. It follows strictly the same order as in Chapter 18 of *Vegetation of South Africa, Lesotho and Swaziland*. Detailed credits are featured in the relevant chapters of the *Vegetation of South Africa, Lesotho and Swaziland*. Ilze Boonzaaier (Centre for Geographic Analysis, Stellenbosch Univer-

sity) joined the original team and was instrumental in cartography of the new Cape Peninsula map. The editing and compilation of the material included in this Atlas was undertaken by the original three editors of the VegMap (L. Mucina, M.C. Rutherford and L.W. Powrie), who were joined by the cartographic editors, J.H. van der Merwe and A. van Niekerk (Centre for Geographic Analysis, Stellenbosch University). A.R. Rebelo, N. Helme & P.M. Holmes are the authors of the new concept of the unit 'FFh 11 Peninsula Shale Fynbos'. Small adjustments to the vegetation unit borders in the Milnerton estuary were done by L. Mucina (based on fieldwork and using Google Earth coverage: http://earth.google.com).

Citation suggestions

Full citation:

MUCINA, L., RUTHERFORD, M.C., POWRIE, L.W., VAN NIEKERK, A. & VAN DER MERWE, J.H. (eds), with contributions by REBELO, A.G., CAMP, K.G.T., LÖTTER, M.C., HOARE, D.B., BOUCHER, C., BREDENKAMP, G.J., VLOK, J.H.J., EUSTON-BROWN, D.I.W., JÜRGENS, N., DU PREEZ, P.J., LE ROUX, A., SCHMIEDEL, U., SCOTT-SHAW, C.R, VAN ROOYEN, N., DOBSON, L., PALMER, A.R., GELDENHUYS, C.J., LLOYD, J.W. VAN DER MERWE, B., BEZUIDENHOUT, H., SIEBERT, F., SIEBERT, S.J., GOODMAN, P.S., WINTER, P.J.D., HELME, N., SMIT, J.H.L., DESMET, P.G., PFAB, M., MCKENZIE, B., SCHOLES, R.J., MANNING, J.C., VAN WYK, E., ZAMBATIS, N., LECHMERE-OERTEL, R.G., ECKHARDT, H.C., LUBBINGE, J.-W., MATTHEWS, W.S., MCDONALD, D.J., SMIT, W.J., BENNETT, R.G., JONAS, Z., LOMBARD, A.T., DE FREY, W., ROBESSON, R., OELLERMANN, C., GROBLER, A. & BOONZAAIER, I. 2014. Vegetation Field Atlas of Continental South Africa, Lesotho and Swaziland. *Strelitzia* 33. South African National Biodiversity Institute, Pretoria.

Citation for vegetation map of City of Cape Town:

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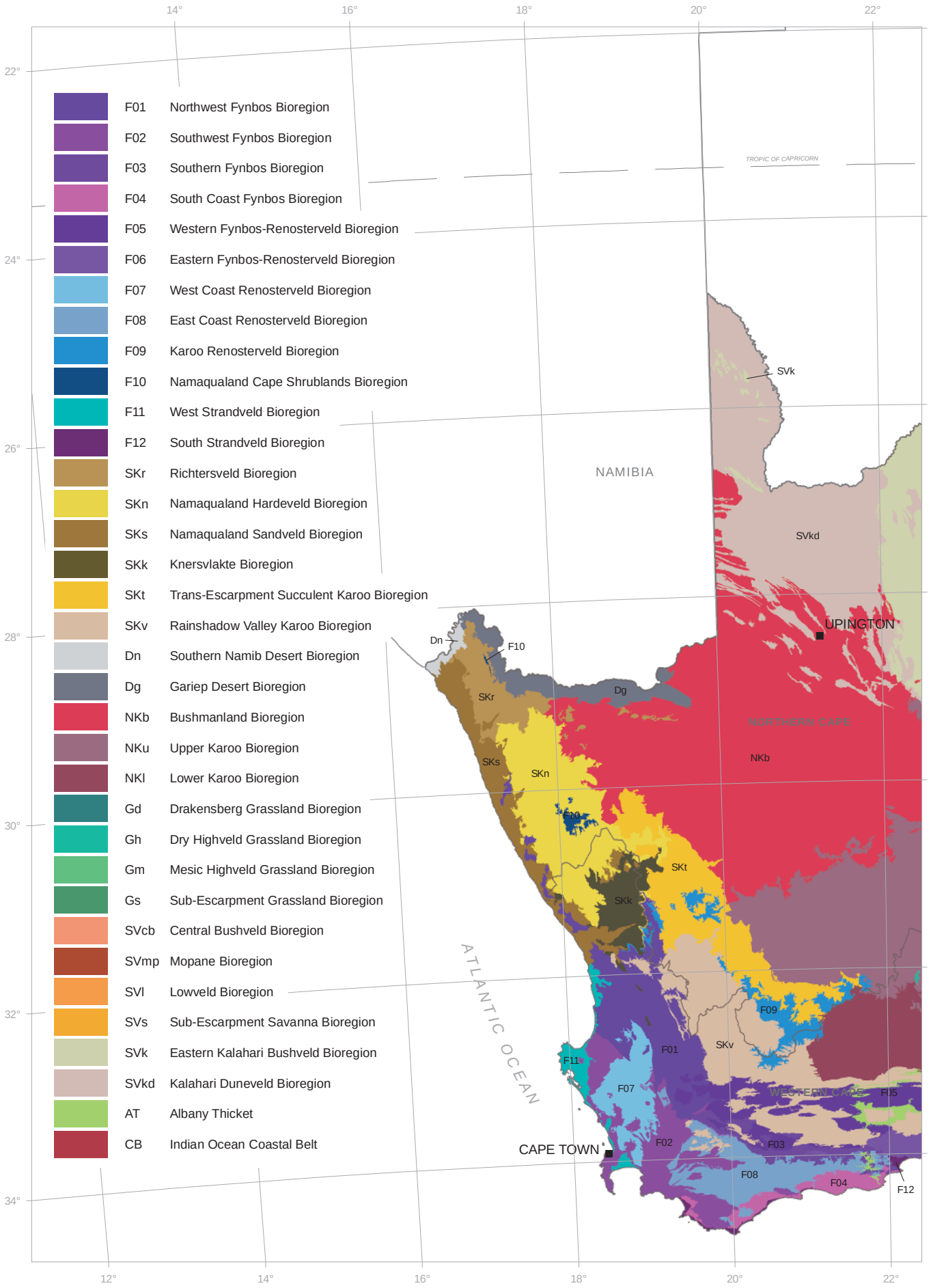
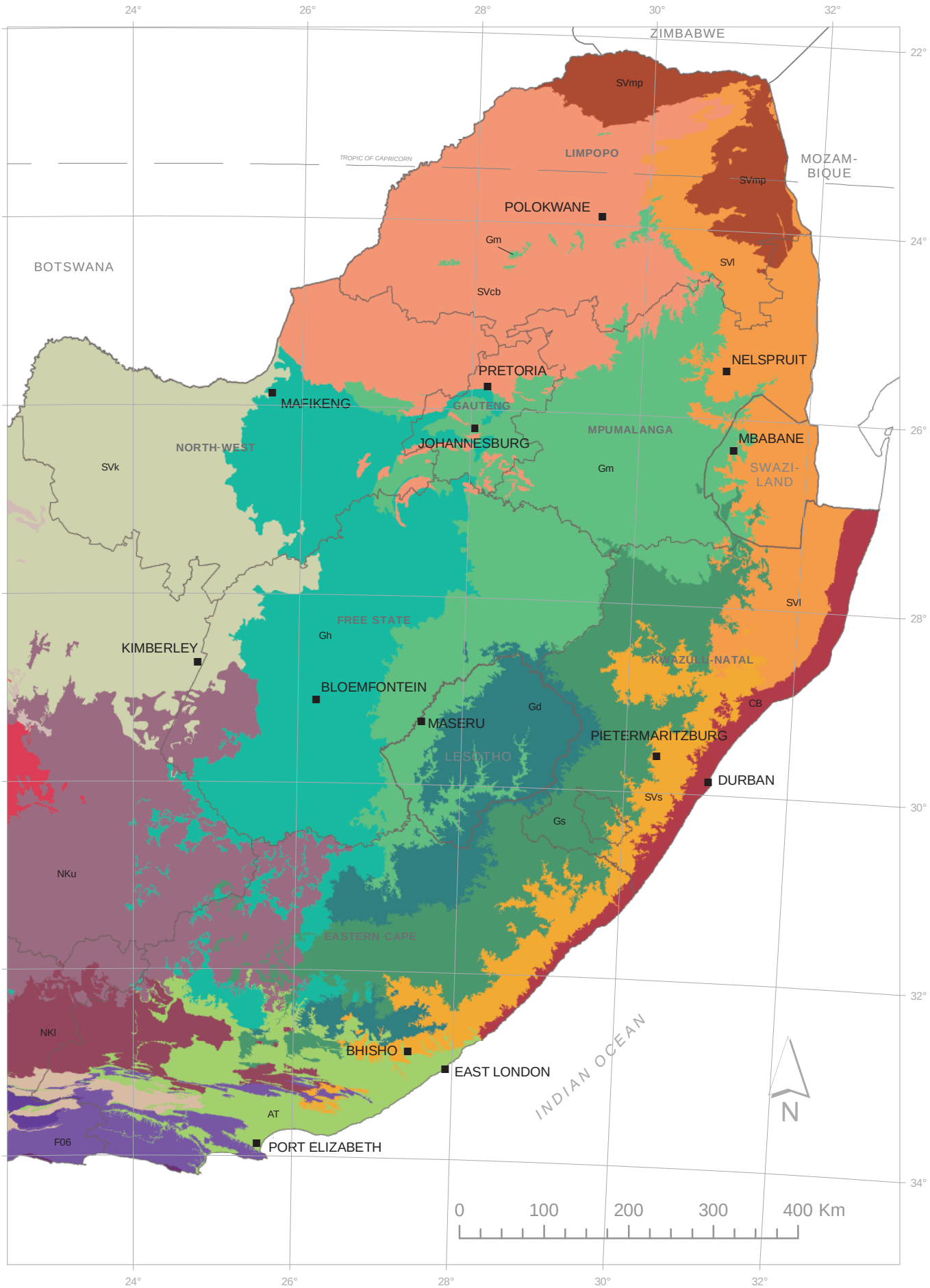


Figure 2 Bioregions of South Africa, Lesotho and Swaziland.


24°
26°
28°
30°
32°
22°
24°
26°
28°
30°
32°
34°
ZIMBABWE
MOZAM-
BIQUE
BOTSWANA
TROPIC OF CAPRICORN
LIMPOPO
POLOKWANE
NORTH-WEST
MAFIKENG
GAUTENG
PRETORIA
JOHANNESBURG
MPUMALANGA
NELSPRUIT
MBABANE
SWAZI-
LAND
FREE STATE
KIMBERLEY
BLOEMFONTEIN
MASERU
LESOTHO
KWAZULU-NATAL
PIETERMARITZBURG
DURBAN
EASTERN CAPE
BHISHO
EAST LONDON
PORT ELIZABETH
INDIAN OCEAN
SVmp
Gm
SVl
SVcb
SVk
Gh
Gd
CB
SVs
Gs
NKu
NKl
AT
F06
N
0
100
200
300
400 Km

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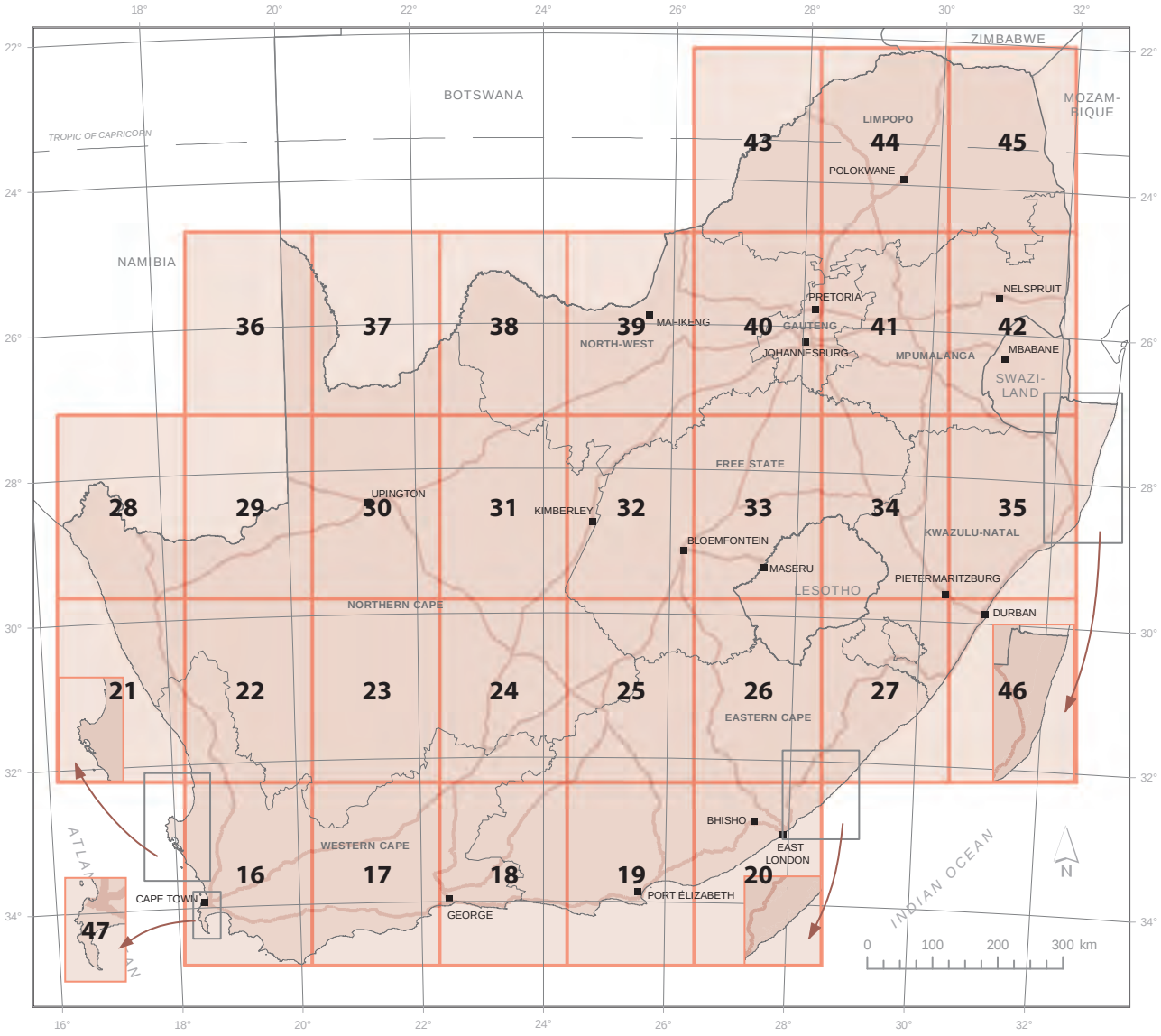
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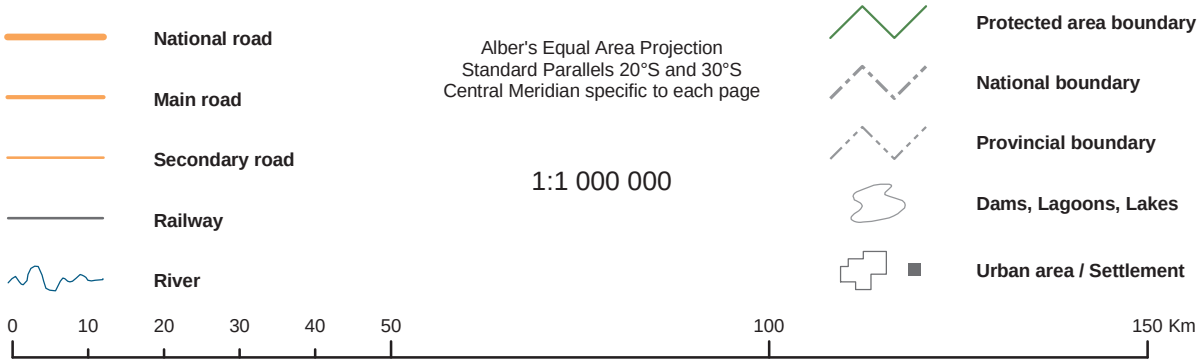
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Maps

Index map



Legend to the Vegetation Units and Topographical Features



FYNBOS BIOME

Sandstone Fynbos

- FFs 1 Bokkeveld Sandstone Fynbos
- FFs 2 Graafwater Sandstone Fynbos
- FFs 3 Olifants Sandstone Fynbos
- FFs 4 Cederberg Sandstone Fynbos
- FFs 5 Winterhoek Sandstone Fynbos
- FFs 6 Piketberg Sandstone Fynbos
- FFs 7 North Hex Sandstone Fynbos
- FFs 8 South Hex Sandstone Fynbos
- FFs 9 Peninsula Sandstone Fynbos
- FFs 10 Hawequas Sandstone Fynbos
- FFs 11 Kogelberg Sandstone Fynbos
- FFs 12 Overberg Sandstone Fynbos
- FFs 13 North Sonderend Sandstone Fynbos
- FFs 14 South Sonderend Sandstone Fynbos
- FFs 15 North Langeberg Sandstone Fynbos
- FFs 16 South Langeberg Sandstone Fynbos
- FFs 17 Potberg Sandstone Fynbos
- FFs 18 North Outeniqua Sandstone Fynbos
- FFs 19 South Outeniqua Sandstone Fynbos
- FFs 20 Tsitsikamma Sandstone Fynbos
- FFs 21 North Rooiberg Sandstone Fynbos
- FFs 22 South Rooiberg Sandstone Fynbos
- FFs 23 North Swartberg Sandstone Fynbos
- FFs 24 South Swartberg Sandstone Fynbos
- FFs 25 North Kammanassie Sandstone Fynbos
- FFs 26 South Kammanassie Sandstone Fynbos
- FFs 27 Kouga Sandstone Fynbos
- FFs 28 Kouga Grassy Sandstone Fynbos
- FFs 29 Algoa Sandstone Fynbos
- FFs 30 Western Altimontane Sandstone Fynbos
- FFs 31 Swartberg Altimontane Sandstone Fynbos

Quartzite Fynbos

- FFq 1 Stinkfonteinberge Quartzite Fynbos
- FFq 2 Swartruggens Quartzite Fynbos
- FFq 3 Matjiesfontein Quartzite Fynbos
- FFq 4 Breede Quartzite Fynbos
- FFq 5 Grootrivier Quartzite Fynbos
- FFq 6 Suurberg Quartzite Fynbos

Sand Fynbos

- FFd 1 Namaqualand Sand Fynbos
- FFd 2 Leipoldtville Sand Fynbos
- FFd 3 Hopefield Sand Fynbos
- FFd 4 Atlantis Sand Fynbos

FFd 5 Cape Flats Sand Fynbos
FFd 6 Hangklip Sand Fynbos
FFd 7 Agulhas Sand Fynbos
FFd 8 Breede Sand Fynbos
FFd 9 Albertinia Sand Fynbos
FFd 10 Knysna Sand Fynbos
FFd 11 Southern Cape Dune Fynbos

Shale Fynbos

FFh 1 Kouebokkeveld Shale Fynbos
FFh 2 Matjiesfontein Shale Fynbos
FFh 3 Swartberg Shale Fynbos
FFh 4 Breede Shale Fynbos
FFh 5 Cape Winelands Shale Fynbos
FFh 6 Elgin Shale Fynbos
FFh 7 Greyton Shale Fynbos
FFh 8 Montagu Shale Fynbos
FFh 9 Garden Route Shale Fynbos
FFh 10 Suurberg Shale Fynbos

Shale Band Vegetation

FFb 1 Northern Inland Shale Band Vegetation
FFb 2 Western Coastal Shale Band Vegetation
FFb 3 Central Inland Shale Band Vegetation
FFb 4 Central Coastal Shale Band Vegetation
FFb 5 Eastern Inland Shale Band Vegetation
FFb 6 Eastern Coastal Shale Band Vegetation

Conglomerate Fynbos

FFt 1 Kango Conglomerate Fynbos
FFt 2 Loerie Conglomerate Fynbos

Alluvium Fynbos

FFa 1 Kouebokkeveld Alluvium Fynbos
FFa 2 Breede Alluvium Fynbos
FFa 3 Swartland Alluvium Fynbos
FFa 4 Lourensford Alluvium Fynbos

Granite Fynbos

FFg 1 Kamiesberg Granite Fynbos
FFg 2 Boland Granite Fynbos
FFg 3 Peninsula Granite Fynbos
FFg 4 Robertson Granite Fynbos
FFg 5 Garden Route Granite Fynbos

Silcrete Fynbos

FFc 1 Swellendam Silcrete Fynbos

Ferricrete Fynbos

FFf 1 Elim Ferricrete Fynbos
FFf 2 Potberg Ferricrete Fynbos

Limestone Fynbos

FFl 1 Agulhas Limestone Fynbos
FFl 2 De Hoop Limestone Fynbos
FFl 3 Canca Limestone Fynbos

Shale Renosterveld

FRs 1 Vanrhynsdorp Shale Renosterveld
FRs 2 Nieuwoudtville Shale Renosterveld
FRs 3 Roggeveld Shale Renosterveld
FRs 4 Ceres Shale Renosterveld
FRs 5 Central Mountain Shale Renosterveld
FRs 6 Matjiesfontein Shale Renosterveld
FRs 7 Montagu Shale Renosterveld
FRs 8 Breede Shale Renosterveld
FRs 9 Swartland Shale Renosterveld
FRs 10 Peninsula Shale Renosterveld
FRs 11 Western Rûens Shale Renosterveld
FRs 12 Central Rûens Shale Renosterveld
FRs 13 Eastern Rûens Shale Renosterveld
FRs 14 Mossel Bay Shale Renosterveld
FRs 15 Swartberg Shale Renosterveld

FRs 16 Uniondale Shale Renosterveld
FRs 17 Langkloof Shale Renosterveld
FRs 18 Baviaanskloof Shale Renosterveld
FRs 19 Humansdorp Shale Renosterveld

Granite Renosterveld

FRg 1 Namaqualand Granite Renosterveld
FRg 2 Swartland Granite Renosterveld
FRg 3 Robertson Granite Renosterveld

Dolerite Renosterveld

FRd 1 Nieuwoudtville-Roggeveld Dolerite Renosterveld
FRd 2 Hantam Plateau Dolerite Renosterveld

Alluvium Renosterveld

FRa 1 Breede Alluvium Renosterveld
FRa 2 Swartland Alluvium Renosterveld

Silcrete Renosterveld

FRc 1 Swartland Silcrete Renosterveld
FRc 2 Rûens Silcrete Renosterveld

Limestone Renosterveld

FRl 1 Kango Limestone Renosterveld

Western Strandveld

FS 1 Lambert's Bay Strandveld
FS 2 Saldanha Granite Strandveld
FS 3 Saldanha Flats Strandveld
FS 4 Saldanha Limestone Strandveld
FS 5 Langebaan Dune Strandveld
FS 6 Cape Flats Dune Strandveld
FS 7 Overberg Dune Strandveld
FS 8 Blombos Strandveld
FS 9 Groot Brak Dune Strandveld

SUCCULENT KAROO BIOME

Richtersveld Bioregion Bioregion

SKr 1 Central Richtersveld Mountain Shrubland
SKr 2 Upper Annisvlakte Succulent Shrubland
SKr 3 Goariep Mountain Succulent Shrubland
SKr 4 Lekkersing Succulent Shrubland
SKr 5 Vyftienmyl se Berge Succulent Shrubland
SKr 6 Stinkfonteinberge Eastern Apron Shrubland
SKr 7 Northern Richtersveld Scorpionstailveld
SKr 8 Rosyntjieberg Succulent Shrubland
SKr 9 Tatasberg Mountain Succulent Shrubland
SKr 10 Die Plate Succulent Shrubland
SKr 11 Rooiberg Quartz Vygieveld
SKr 12 Kosiesberg Succulent Shrubland
SKr 13 Southern Richtersveld Scorpionstailveld
SKr 14 Southern Richtersveld Inselberg Shrubland
SKr 15 Anenous Plateau Shrubland
SKr 16 Umdaus Mountains Succulent Shrubland
SKr 17 Eenriet Plains Succulent Shrubland
SKr 18 Bushmanland Inselberg Shrubland
SKr 19 Aggeneys Gravel Vygieveld

Namaqualand Hardeveld Bioregion

SKn 1 Namaqualand Klipkoppe Shrubland
SKn 2 Namaqualand Shale Shrubland
SKn 3 Namaqualand Blomveld
SKn 4 Namaqualand Heuweltjieveld
SKn 5 Platbakkies Succulent Shrubland
SKn 6 Kamiesberg Mountains Shrubland

Namaqualand Sandveld Bioregion

SKs 1 Richtersveld Coastal Duneveld
SKs 2 Northern Richtersveld Yellow Duneveld
SKs 3 Southern Richtersveld Yellow Duneveld
SKs 4 Richtersveld Sandy Coastal Scorpionstailveld
SKs 5 Richtersveld Red Duneveld

SKs 6 Oograbies Plains Sandy Grassland
SKs 7 Namaqualand Strandveld
SKs 8 Namaqualand Coastal Duneveld
SKs 9 Namaqualand Inland Duneveld
SKs 10 Riethuis-Wallekraal Quartz Vygieveld
SKs 11 Namaqualand Arid Grassland
SKs 12 Namaqualand Spinescent Grassland
SKs 13 Klawer Sandy Shrubland

Knersvlakte Bioregion

SKk 1 Northern Knersvlakte Vygieveld
SKk 2 Central Knersvlakte Vygieveld
SKk 3 Knersvlakte Quartz Vygieveld
SKk 4 Knersvlakte Shale Vygieveld
SKk 5 Vanrhynsdorp Gannabosveld
SKk 6 Knersvlakte Dolomite Vygieveld
SKk 7 Citrusdal Vygieveld
SKk 8 Piketberg Quartz Succulent Shrubland

Trans-Escarpment Succulent Karoo Bioregion

SKt 1 Western Bushmanland Klipveld
SKt 2 Hantam Karoo
SKt 3 Roggeveld Karoo

Rainshadow Valley Karoo Bioregion

SKv 1 Doringrivier Quartzite Karoo
SKv 2 Swartruggens Quartzite Karoo
SKv 3 Agter-Sederberg Shrubland
SKv 4 Tanqua Escarpment Shrubland
SKv 5 Tanqua Karoo
SKv 6 Koedoesberge-Moordenaars Karoo
SKv 7 Robertson Karoo
SKv 8 Western Little Karoo
SKv 9 Western Gwarrieveld
SKv 10 Little Karoo Quartz Vygieveld
SKv 11 Eastern Little Karoo
SKv 12 Willowmore Gwarrieveld
SKv 13 Prince Albert Succulent Karoo
SKv 14 Steytlerville Karoo

DESERT BIOME

Namib Desert Bioregion

Dn 1 Alexander Bay Coastal Duneveld
Dn 2 Namib Lichen Fields
Dn 3 Western Gariep Plains Desert
Dn 4 Western Gariep Lowland Desert
Dn 5 Western Gariep Hills Desert

Gariep Desert Bioregion

Dg 1 Noms Mountain Desert
Dg 2 Richtersberg Mountain Desert
Dg 3 Richtersveld Sheet Wash Desert
Dg 4 Kwaggarug Mountain Desert
Dg 5 Kahams Mountain Desert
Dg 6 Helskloof Canyon Desert
Dg 7 Northern Nababiepsberge Mountain Desert
Dg 8 Southern Nababiepsberge Mountain Desert
Dg 9 Eastern Gariep Plains Desert
Dg 10 Eastern Gariep Rocky Desert

NAMA-KAROO BIOME

Bushmanland Bioregion

NKb 1 Lower Gariep Broken Veld
NKb 2 Blouputs Karroid Thornveld
NKb 3 Bushmanland Arid Grassland
NKb 4 Bushmanland Sandy Grassland
NKb 5 Kalahari Karroid Shrubland
NKb 6 Bushmanland Basin Shrubland

Upper Karoo Bioregion

- NKu 1 Western Upper Karoo
- NKu 2 Upper Karoo Hardeveld
- NKu 3 Northern Upper Karoo
- NKu 4 Eastern Upper Karoo

Lower Karoo Bioregion

- NKl 1 Gamka Karoo
- NKl 2 Eastern Lower Karoo
- NKl 3 Lower Karoo Gwarrieveld
- NKl 4 Albany Broken Veld

GRASSLAND BIOME

Drakensberg Grassland Bioregion

- Gd 1 Amathole Montane Grassland
- Gd 2 Amathole Mistbelt Grassland
- Gd 3 Stormberg Plateau Grassland
- Gd 4 Southern Drakensberg Highland Grassland
- Gd 5 Northern Drakensberg Highland Grassland
- Gd 6 Drakensberg-Amathole Afromontane Fynbos
- Gd 7 uKhahlamba Basalt Grassland
- Gd 8 Lesotho Highland Basalt Grassland
- Gd 9 Western Lesotho Basalt Shrubland
- Gd 10 Drakensberg Afroalpine Heathland

Dry Highveld Grassland Bioregion

- Gh 1 Karoo Escarpment Grassland
- Gh 2 Aliwal North Dry Grassland
- Gh 3 Xhariep Karroid Grassland
- Gh 4 Besemkaree Koppies Shrubland
- Gh 5 Bloemfontein Dry Grassland
- Gh 6 Central Free State Grassland
- Gh 7 Winburg Grassy Shrubland
- Gh 8 Bloemfontein Karroid Shrubland
- Gh 9 Western Free State Clay Grassland
- Gh 10 Vaal-Vet Sandy Grassland
- Gh 11 Vredefort Dome Granite Grassland
- Gh 12 Vaal Reefs Dolomite Sinkhole Woodland
- Gh 13 Klerksdorp Thornveld
- Gh 14 Western Highveld Sandy Grassland
- Gh 15 Carletonville Dolomite Grassland

Mesic Highveld Grassland Bioregion

- Gm 1 Zastron Moist Grassland
- Gm 2 Senqu Montane Shrubland
- Gm 3 Eastern Free State Clay Grassland
- Gm 4 Eastern Free State Sandy Grassland
- Gm 5 Basotho Montane Shrubland
- Gm 6 Frankfort Highveld Grassland
- Gm 7 Northern Free State Shrubland
- Gm 8 Soweto Highveld Grassland
- Gm 9 Tsakane Clay Grassland
- Gm 10 Egoli Granite Grassland
- Gm 11 Rand Highveld Grassland
- Gm 12 Eastern Highveld Grassland
- Gm 13 Amersfoort Highveld Clay Grassland
- Gm 14 Wakkerstroom Montane Grassland
- Gm 15 Paulpietersburg Moist Grassland
- Gm 16 KaNgwane Montane Grassland
- Gm 17 Barberton Montane Grassland
- Gm 18 Lydenburg Montane Grassland
- Gm 19 Sekhukhune Montane Grassland
- Gm 20 Leolo Summit Sourveld
- Gm 21 Lydenburg Thornveld
- Gm 22 Northern Escarpment Dolomite Grassland
- Gm 23 Northern Escarpment Quartzite Sourveld
- Gm 24 Northern Escarpment Afromontane Fynbos
- Gm 25 Woodbush Granite Grassland
- Gm 26 Wolkberg Dolomite Grassland
- Gm 27 Strydpoort Summit Sourveld
- Gm 28 Soutpansberg Summit Sourveld
- Gm 29 Waterberg-Magaliesberg Summit Sourveld

Sub-Escarpment Grassland Bioregion

- Gs 1 Northern Zululand Mistbelt Grassland
- Gs 2 Ithala Quartzite Sourveld
- Gs 3 Low Escarpment Moist Grassland
- Gs 4 Northern KwaZulu-Natal Moist Grassland
- Gs 5 Northern KwaZulu-Natal Shrubland
- Gs 6 KwaZulu-Natal Highland Thornveld
- Gs 7 Income Sandy Grassland
- Gs 8 Mooi River Highland Grassland
- Gs 9 Midlands Mistbelt Grassland
- Gs 10 Drakensberg Foothill Moist Grassland
- Gs 11 Southern KwaZulu-Natal Moist Grassland
- Gs 12 East Griqualand Grassland
- Gs 13 Mabela Sandy Grassland
- Gs 14 Mthatha Moist Grassland
- Gs 15 Tsomo Grassland
- Gs 16 Queenstown Thornveld
- Gs 17 Tarkastad Montane Shrubland
- Gs 18 Bedford Dry Grassland

SAVANNA BIOME

Central Bushveld Bioregion

- SVcb 1 Dwaalboom Thornveld
- SVcb 2 Madikwe Dolomite Bushveld
- SVcb 3 Zeerust Thornveld
- SVcb 4 Dwarsberg-Swartruggens Mountain Bushveld
- SVcb 5 Pilanesberg Mountain Bushveld
- SVcb 6 Marikana Thornveld
- SVcb 7 Norite Koppies Bushveld
- SVcb 8 Moot Plains Bushveld
- SVcb 9 Gold Reef Mountain Bushveld
- SVcb 10 Gauteng Shale Mountain Bushveld
- SVcb 11 Andesite Mountain Bushveld
- SVcb 12 Central Sandy Bushveld
- SVcb 13 Loskop Mountain Bushveld
- SVcb 14 Loskop Thornveld
- SVcb 15 Springbokvlakte Thornveld
- SVcb 16 Western Sandy Bushveld
- SVcb 17 Waterberg Mountain Bushveld
- SVcb 18 Roodeberg Bushveld
- SVcb 19 Limpopo Sweet Bushveld
- SVcb 20 Makhado Sweet Bushveld
- SVcb 21 Soutpansberg Mountain Bushveld
- SVcb 22 VhaVenda Miombo
- SVcb 23 Polokwane Plateau Bushveld
- SVcb 24 Mamabolo Mountain Bushveld
- SVcb 25 Poung Dolomite Mountain Bushveld
- SVcb 26 Ohrigstad Mountain Bushveld
- SVcb 27 Sekhukhune Plains Bushveld
- SVcb 28 Sekhukhune Mountain Bushveld

Mopane Bioregion

- SVmp 1 Musina Mopane Bushveld
- SVmp 2 Limpopo Ridge Bushveld
- SVmp 3 Cathedral Mopane Bushveld
- SVmp 4 Mopane Basalt Shrubland
- SVmp 5 Tsende Mopaneveld
- SVmp 6 Lowveld Rugged Mopaneveld
- SVmp 7 Phalaborwa-Timbavati Mopaneveld
- SVmp 8 Mopane Gabbro Shrubland

Lowveld Bioregion

- SVl 1 Makuleke Sandy Bushveld
- SVl 2 Nwambyia-Pumbe Sandy Bushveld
- SVl 3 Granite Lowveld
- SVl 4 Delagoa Lowveld
- SVl 5 Tshokwane-Hlane Basalt Lowveld
- SVl 6 Gabbro Grassy Bushveld
- SVl 7 Gravelotte Rocky Bushveld
- SVl 8 Tzaneen Sour Bushveld
- SVl 9 Legogote Sour Bushveld
- SVl 10 Pretoriuskop Sour Bushveld

SVl 11 Malelane Mountain Bushveld
SVl 12 Kaalrug Mountain Bushveld
SVl 13 Barberton Serpentine Sourveld
SVl 14 Swaziland Sour Bushveld
SVl 15 Northern Lebombo Bushveld
SVl 16 Southern Lebombo Bushveld
SVl 17 Lebombo Summit Sourveld
SVl 18 Tembe Sandy Bushveld
SVl 19 Western Maputaland Sandy Bushveld
SVl 20 Western Maputaland Clay Bushveld
SVl 21 Makatini Clay Thicket
SVl 22 Northern Zululand Sourveld
SVl 23 Zululand Lowveld
SVl 24 Zululand Coastal Thornveld

Sub-Escarpment Savanna Bioregion

SVs 1 Thukela Valley Bushveld
SVs 2 Thukela Thornveld
SVs 3 KwaZulu-Natal Hinterland Thornveld
SVs 4 Ngongoni Veld
SVs 5 KwaZulu-Natal Sandstone Sourveld
SVs 6 Eastern Valley Bushveld
SVs 7 Bhisho Thornveld

Eastern Kalahari Bushveld Bioregion

SVk 1 Mafikeng Bushveld
SVk 2 Stella Bushveld
SVk 3 Schweizer-Reneke Bushveld
SVk 4 Kimberley Thornveld
SVk 5 Vaalbos Rocky Shrubland
SVk 6 Schmidtsdrif Thornveld
SVk 7 Ghaap Plateau Vaalbosveld
SVk 8 Kuruman Vaalbosveld
SVk 9 Kuruman Thornveld
SVk 10 Kuruman Mountain Bushveld
SVk 11 Molopo Bushveld
SVk 12 Kathu Bushveld
SVk 13 Olifantshoek Plains Thornveld
SVk 14 Postmasburg Thornveld
SVk 15 Koranna-Langeberg Mountain Bushveld
SVk 16 Gordonia Plains Shrubland

Kalahari Duneveld Bioregion

SVkd 1 Gordonia Duneveld
SVkd 2 Gordonia Kameeldoring Bushveld
SVkd 3 Auob Duneveld
SVkd 4 Nossob Bushveld

ALBANY THICKET BIOME

AT 1 Southern Cape Valley Thicket
AT 2 Gamka Thicket
AT 3 Groot Thicket
AT 4 Gamtoos Thicket
AT 5 Sundays Noorsveld
AT 6 Sundays Thicket
AT 7 Coega Bontveld
AT 8 Kowie Thicket
AT 9 Albany Coastal Belt
AT 10 Great Fish Noorsveld
AT 11 Great Fish Thicket
AT 12 Buffels Thicket
AT 13 Eastern Cape Escarpment Thicket
AT 14 Camdebo Escarpment Thicket

INDIAN OCEAN COASTAL BELT

CB 1 Maputaland Coastal Belt
CB 2 Maputaland Wooded Grassland
CB 3 KwaZulu-Natal Coastal Belt
CB 4 Pondoland-Ugu Sandstone Coastal Sourveld
CB 5 Transkei Coastal Belt

FORESTS

Zonal & Intrazonal Forests

FOz 1 Southern Afrotemperate Forest
FOz 2 Northern Afrotemperate Forest
FOz 3 Southern Mistbelt Forest
FOz 4 Northern Mistbelt Forest
FOz 5 Scarp Forest
FOz 6 Southern Coastal Forest
FOz 7 Northern Coastal Forest
FOz 8 Sand Forest
FOz 9 Ironwood Dry Forest

Azonal Forests

FOa 1 Lowveld Riverine Forest
FOa 2 Swamp Forest
FOa 3 Mangrove Forest

AZONAL VEGETATION

Estuarine Vegetation

AZe 1 Arid Estuarine Salt Marshes
AZe 2 Cape Estuarine Salt Marshes
AZe 3 Subtropical Estuarine Salt Marshes

Seashore Vegetation

AZd 1 Namib Seashore Vegetation
AZd 2 Namaqualand Seashore Vegetation
AZd 3 Cape Seashore Vegetation
AZd 4 Subtropical Seashore Vegetation

Eastern Strandveld

AZs 1 Algoa Dune Strandveld
AZs 2 Albany Dune Strandveld
AZs 3 Subtropical Dune Thicket

Alluvial Vegetation

AZa 1 Fynbos Riparian Vegetation
AZa 2 Cape Lowland Alluvial Vegetation
AZa 3 Lower Gariep Alluvial Vegetation
AZa 4 Upper Gariep Alluvial Vegetation
AZa 5 Highveld Alluvial Vegetation
AZa 6 Albany Alluvial Vegetation
AZa 7 Subtropical Alluvial Vegetation

Freshwater Wetlands

AZf 1 Cape Lowland Freshwater Wetlands
AZf 2 Cape Vernal Pools
AZf 3 Eastern Temperate Freshwater Wetlands
AZf 4 Drakensberg Wetlands
AZf 5 Lesotho Mires
AZf 6 Subtropical Freshwater Wetlands

Inland Saline Vegetation

AZi 1 Namaqualand Riviere
AZi 2 Namaqualand Salt Pans
AZi 3 Southern Kalahari Mekgacha
AZi 4 Southern Kalahari Salt Pans
AZi 5 Bushmanland Vloere
AZi 6 Southern Karoo Riviere
AZi 7 Tanqua Wash Riviere
AZi 8 Muscadel Riviere
AZi 9 Cape Inland Salt Pans
AZi 10 Highveld Salt Pans
AZi 11 Subtropical Salt Pans

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Adriaan van Niekerk, born on 29 November 1970 in Cape Town, is an Assistant Professor at the Department of Geography and Environmental Studies, Stellenbosch University (SU), where he has been a lecturer since obtaining his MSc degree (cum laude) in 1997. During his early academic career he focussed on the development and introduction of undergraduate Geographical Information Technology (GIT) courses, including satellite remote sensing and computer-based cartography. His early research interests included the development of web-based mapping and spatial analysis applications. After the completion of his PhD research in 2008, he was appointed as the Director of the Centre for Geographical Analysis (CGA) at SU where he carried out various research and consulting projects for government and private institutions. Currently Prof. van Niekerk's main research interest is the development of Geographical Information Systems (GIS) and remote sensing (earth observation) techniques to support decisions concerning land use, bio-geographical, environmental and socio-economic problems. He is the project leader of a wide range of research activities involving spatial modelling, geographical object-based image and terrain analysis, as well as land cover and vegetation mapping. Prof. van Niekerk also has a keen interest in cartography and has produced and published many wall maps and atlases. He is a registered professional Geographical Information Science (GISc) practitioner and an active member (and former secretary) of the GeoSpatial Information Society of South Africa (GISSA). He chairs the South African Council for Natural Scientific Professions' (SACNASP) GeoSpatial Science professional advisory committee.

Prof. Johannes H. van der Merwe



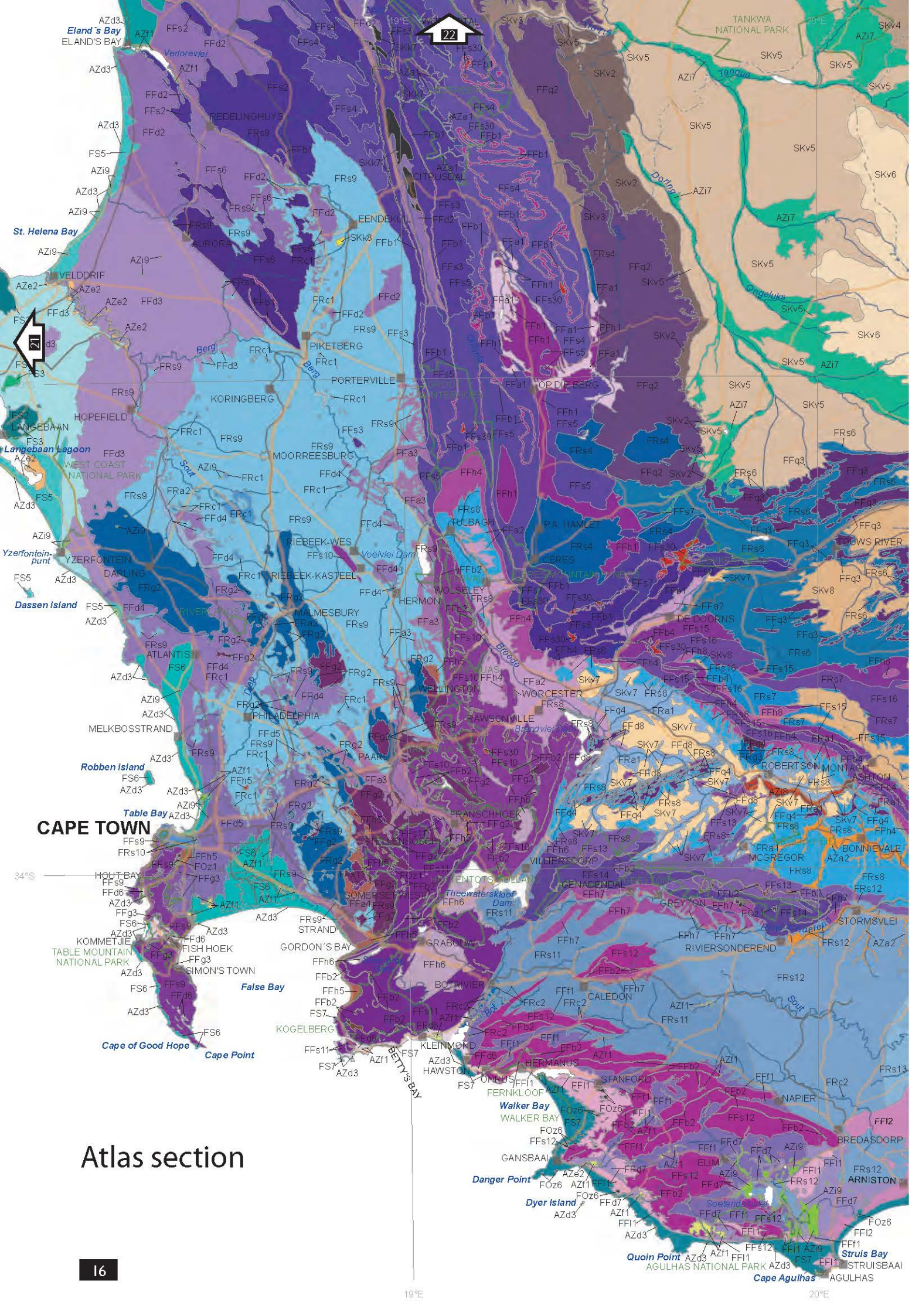
Hannes van der Merwe, born on 24 March 1952 in Ceres, South Africa, is a South African citizen. He received his education in South Africa and obtained scientific degrees and qualifications at Stellenbosch University, spent a postdoctoral period at the University of Leuven in Belgium, served as lecturer at Fort Hare University and served as cartographer, lecturer, professor and head of department in Geography and Environmental Studies at Stellenbosch University in South Africa. He was part-time director and chairman of the board of the Centre for Geographical Analysis at Stellenbosch University. Prof. van der Merwe is a member of IAIAsa and has served on the board of the Society of South African Geographers (SSAG) and as evaluation panel member of the National Research Foundation (NRF), *Journal of South African Geographers*, *Acta Academica* and *Water SA*. He is a rated scientist and has engaged in postgraduate teaching and supervision, research and publication in a range of geographical fields. These include cartography, geomorphology, environmental analysis, GIS, spatial and statistical analysis, research methods, land use and environmental analysis and management, regional management and planning problems, spatial information handling, mapping and analysis, rural and ecotourism potential, management and impact. He has acted as cartographer and editor of atlases, among which the *National Atlas of South West Africa (Namibia)*, *Coastal Sensitivity Atlas of Southern Africa*, *Reader's Digest Atlas of Southern Africa, Vegetation Atlas of South Africa, Linguistic Atlas of South Africa, Kagiso Junior and Senior Desk Atlas* and several published map series. At present he pursues research in environmental analysis and management and the application of spatial analytical technology.

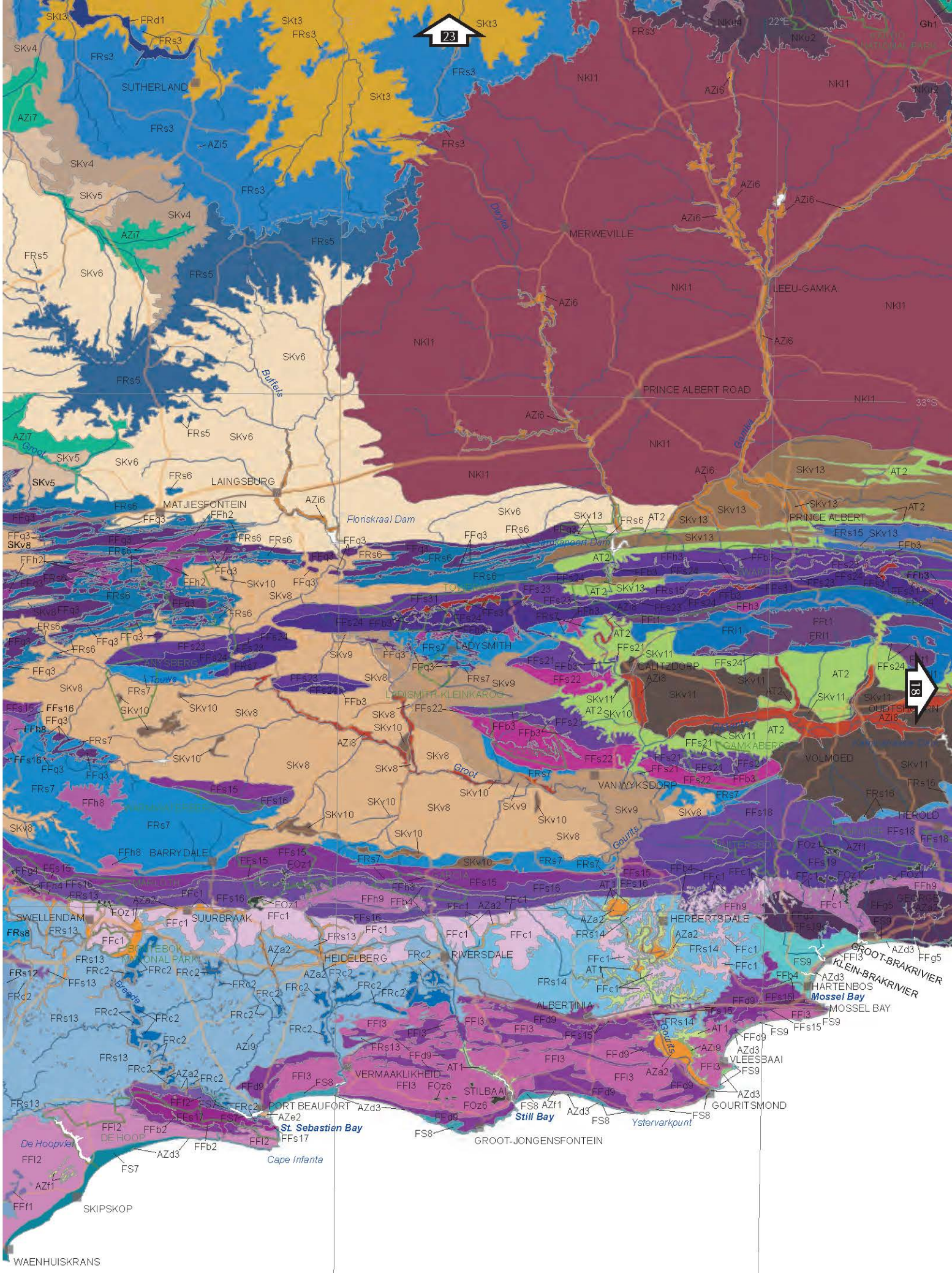
This booklet is a product of the National Vegetation Mapping Project that gave South Africa a comprehensive classification and description of more than 400 vegetation types and a new, modern vegetation map. Chapter 18 of the manual to the vegetation map is republished here in an atlas format for use in the field. The Field Atlas features the vegetation of South Africa (excluding the sub-Antarctic islands), Lesotho and Swaziland on 46 sheets. As a new addition, an original detailed map of the vegetation of the Cape Peninsula has been added to mark the direction of further development of fine-scale vegetation mapping in South Africa. The Field Atlas is printed on water-proof paper to make it fit to withstand adverse weather conditions during field work.

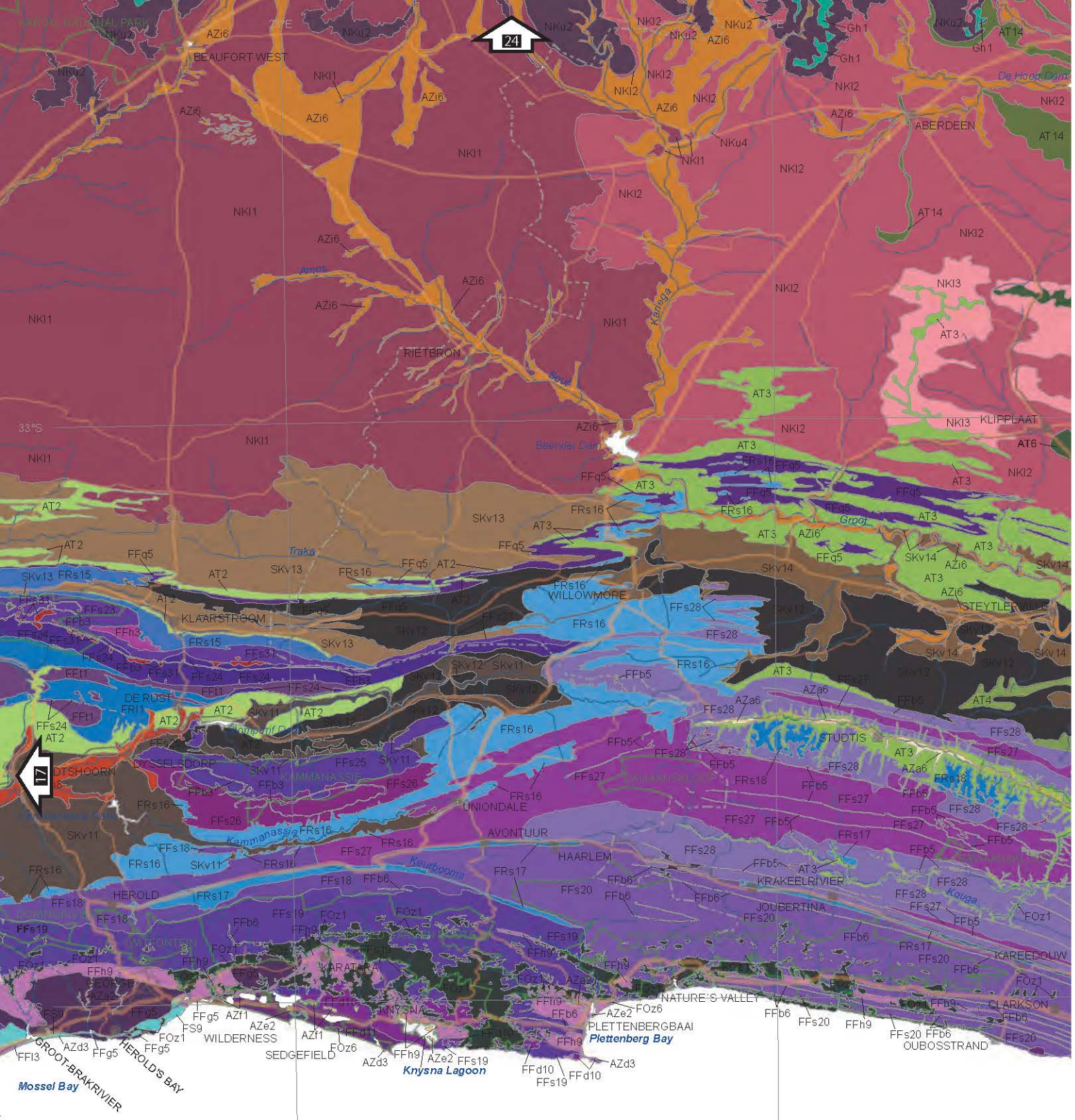
SANBI
Biodiversity for Life
South African National Biodiversity Institute

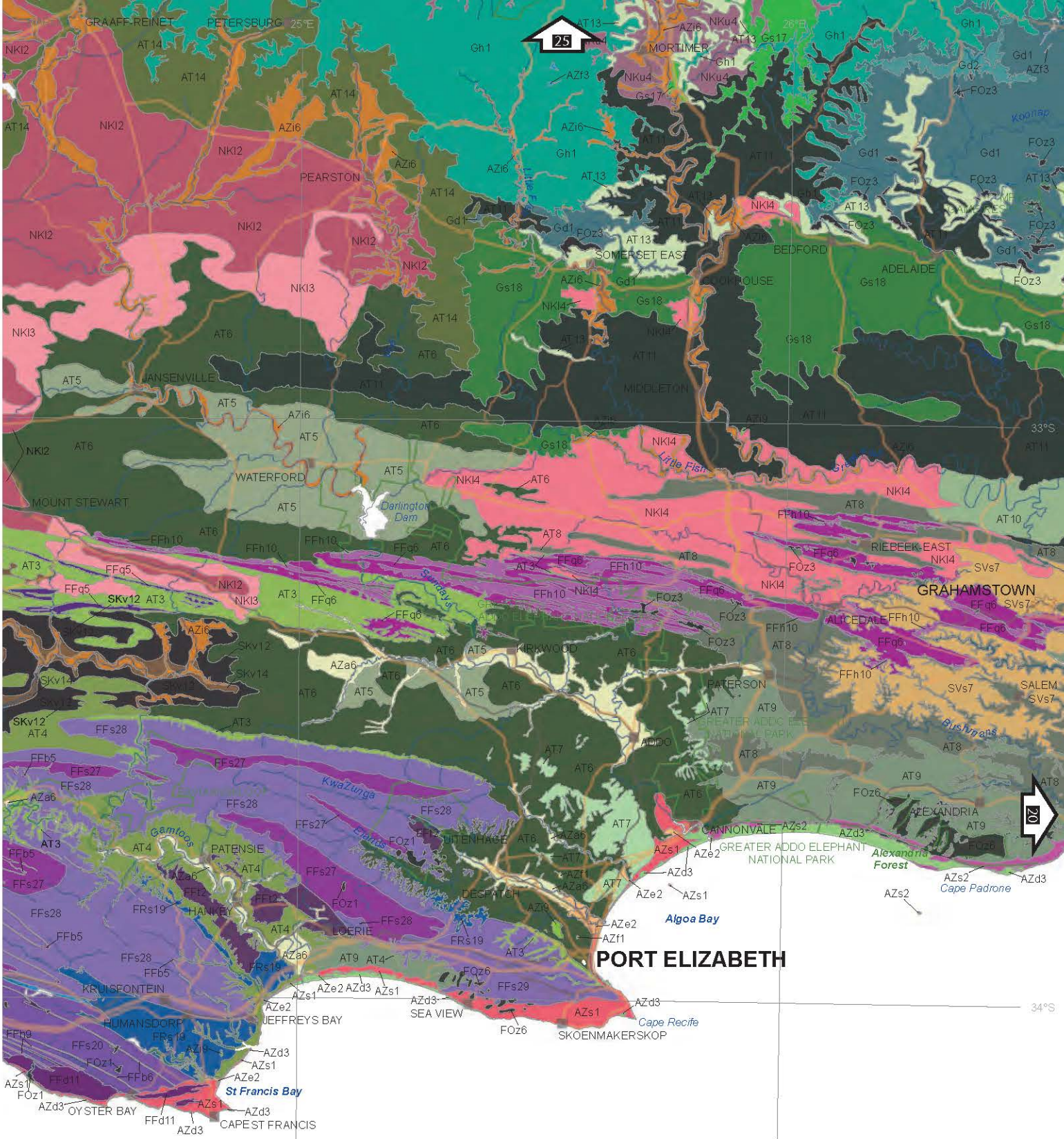


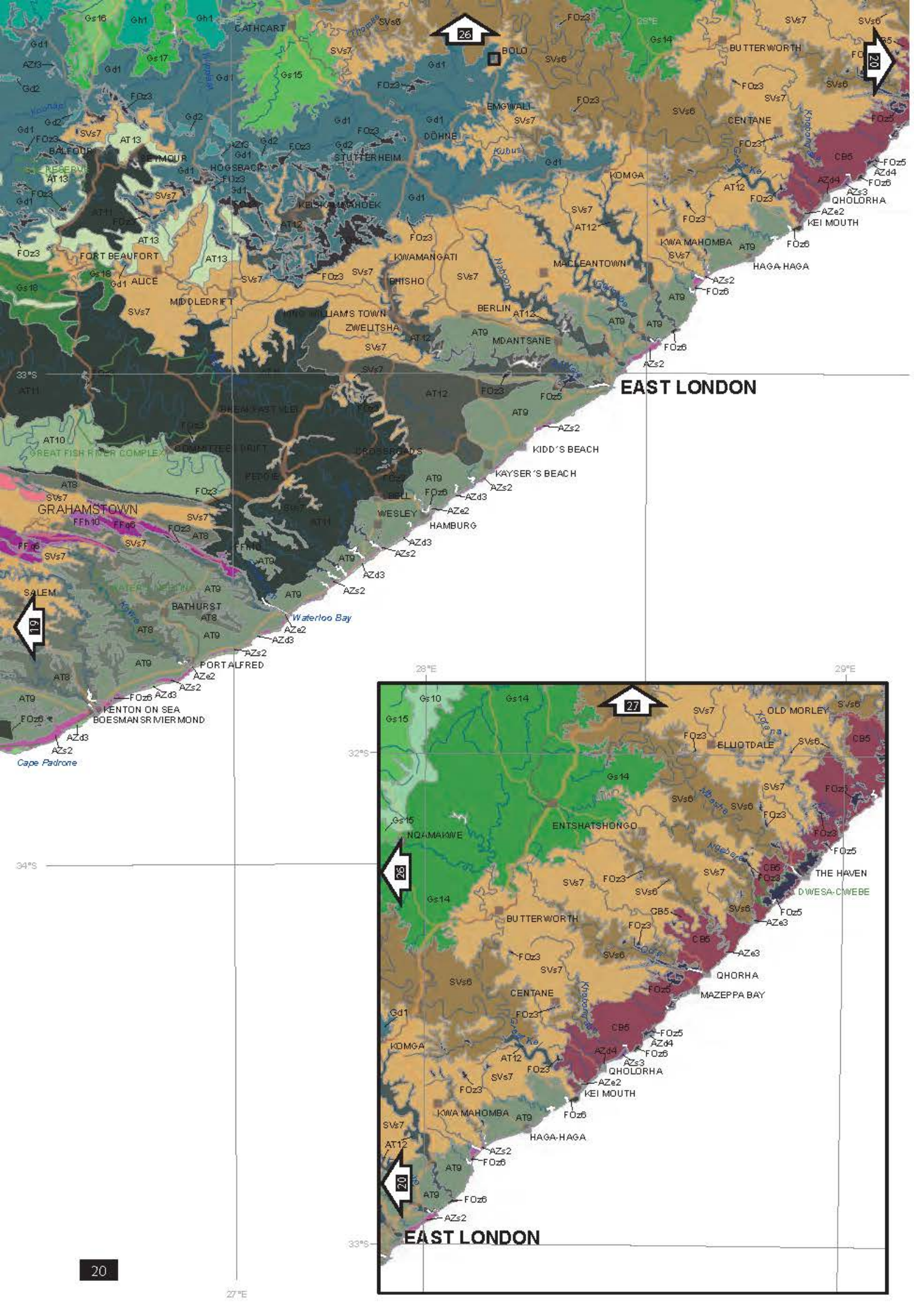
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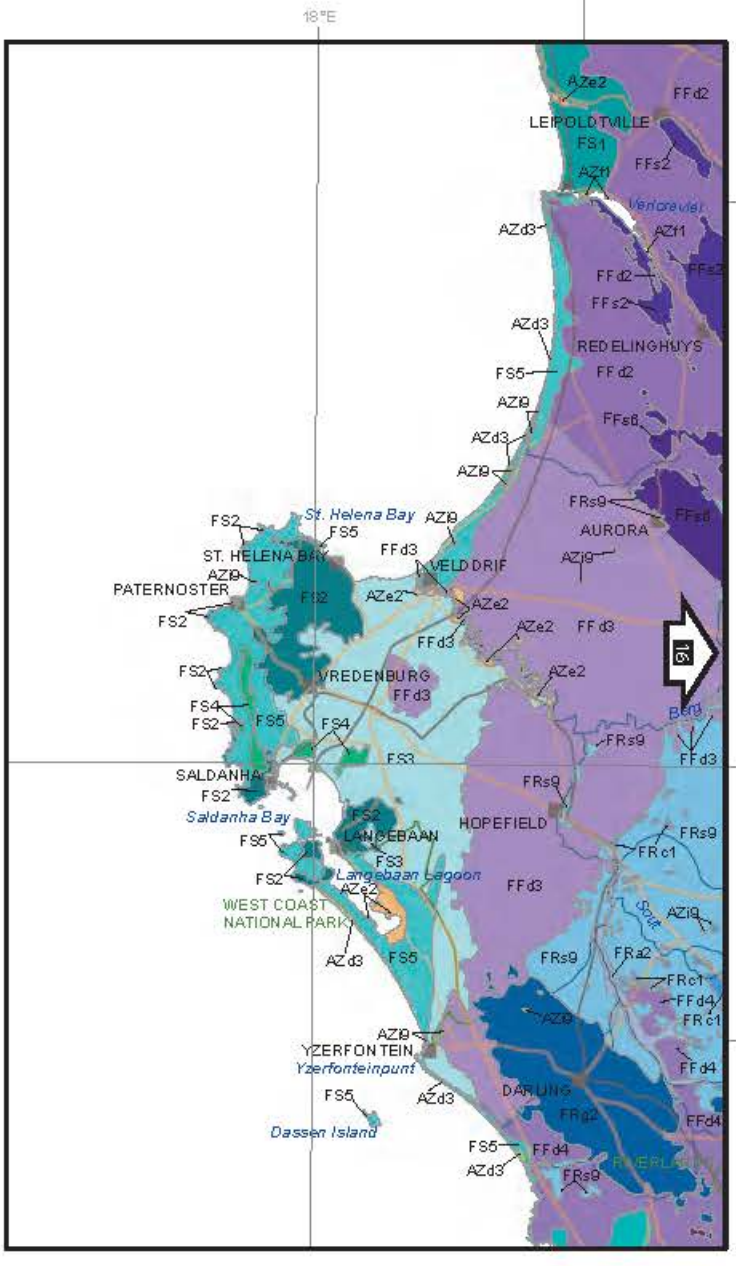

Atlas section
CAPE TOWN
Eland´s Bay
ELAND'S BAY
St. Helena Bay
VELDDRIF
Langebaan Lagoon
WEST COAST NATIONAL PARK
LANGEBAAN
HOPEFIELD
KORINGBERG
PIKETBERG
PORTERVILLE
MOORREESBURG
YZERFONTEIN
DARLING
Yzerfontein-punt
Dassen Island
MALMESBURY
ATLANTIS
MELKBOSSTRAND
PHILADELPHIA
PAARL
WELLINGTON
WORCESTER
TULBAGH
RIEBEEK-WES
RIEBEEK-KASTEEL
Voëlvlei Dam
HERMON
WOLSELEY
RAWSONVILLE
Brandvlei Dam
Robben Island
Table Bay
HOUT BAY
KOMMETJIE
TABLE MOUNTAIN NATIONAL PARK
FISH HOEK
SIMON'S TOWN
False Bay
Cape of Good Hope
Cape Point
STRAND
GORDON´S BAY
GRABOUW
Theewaterskloof Dam
FRANSCHHOEK
STELLENBOSCH
SOMERSET WEST
VILLIERSDORP
GENADENDAL
BOTRIVIER
KOGELBERG
KLEINMOND
HERMANUS
HAWSTON
ONRUS
BETTY'S BAY
CALEDON
GREYTON
RIVIERSONDEREND
MCGREGOR
ROBERTSON
MONTAGU
ASHTON
BONNIEVALE
STORMSVLEI
TOUWS RIVER
DE DOORNS
OP DIE BERG
PA HAMLET
TANKWA NATIONAL PARK
Walker Bay
WALKER BAY
FERNKLOOF
STANFORD
NAPIER
BREDASDORP
ARNISTON
GANSBAAI
Danger Point
Dyer Island
Quoin Point
AGULHAS NATIONAL PARK
Cape Agulhas
AGULHAS
STRUISBAAI
Struis Bay
21
22
34°S
19°E
20°E

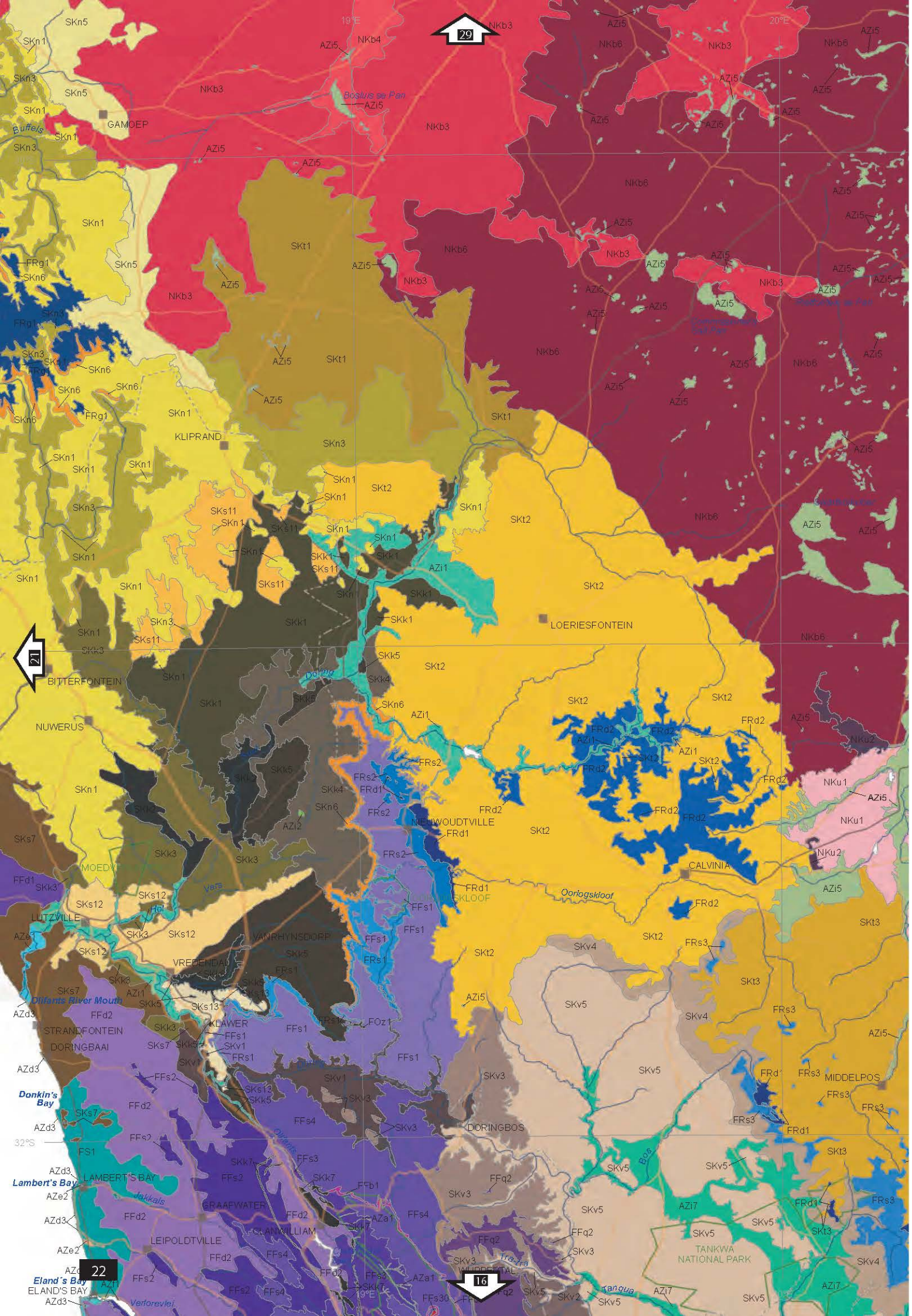

SUTHERLAND
MERWEVILLE
LEEU-GAMKA
PRINCE ALBERT ROAD
LAINGSBURG
MATJIESFONTEIN
PRINCE ALBERT
LADISMITH
CALITZDORP
GAMKABERG
VOLMOED
VAN WYKSDORP
HEROLD
BARRYDALE
SWELLENDAM
SUURBRAAK
HERBERTSDALE
HEIDELBERG
RIVERSDALE
ALBERTINIA
HARTENBOS
MOSSEL BAY
VLEESBAAI
GOURITSMOND
VERMAAKLIKHEID
STILBAAI
PORT BEAUFORT
GROOT-JONGENSFONTEIN
DE HOOP
SKIPSKOP
WAENHUISKRANS
Floriskraal Dam
Groot
Buffels
Gamka
Gourits
Braeke
Touws
Dwyka
St. Sebastian Bay
Still Bay
Mossel Bay
Cape Infanta
Ystervarkpunt
De Hoopvlei
GROOT-BRAKRIVIER
KLEIN-BRAKRIVIER
22°E
33°S
34°S
21°E
22°E

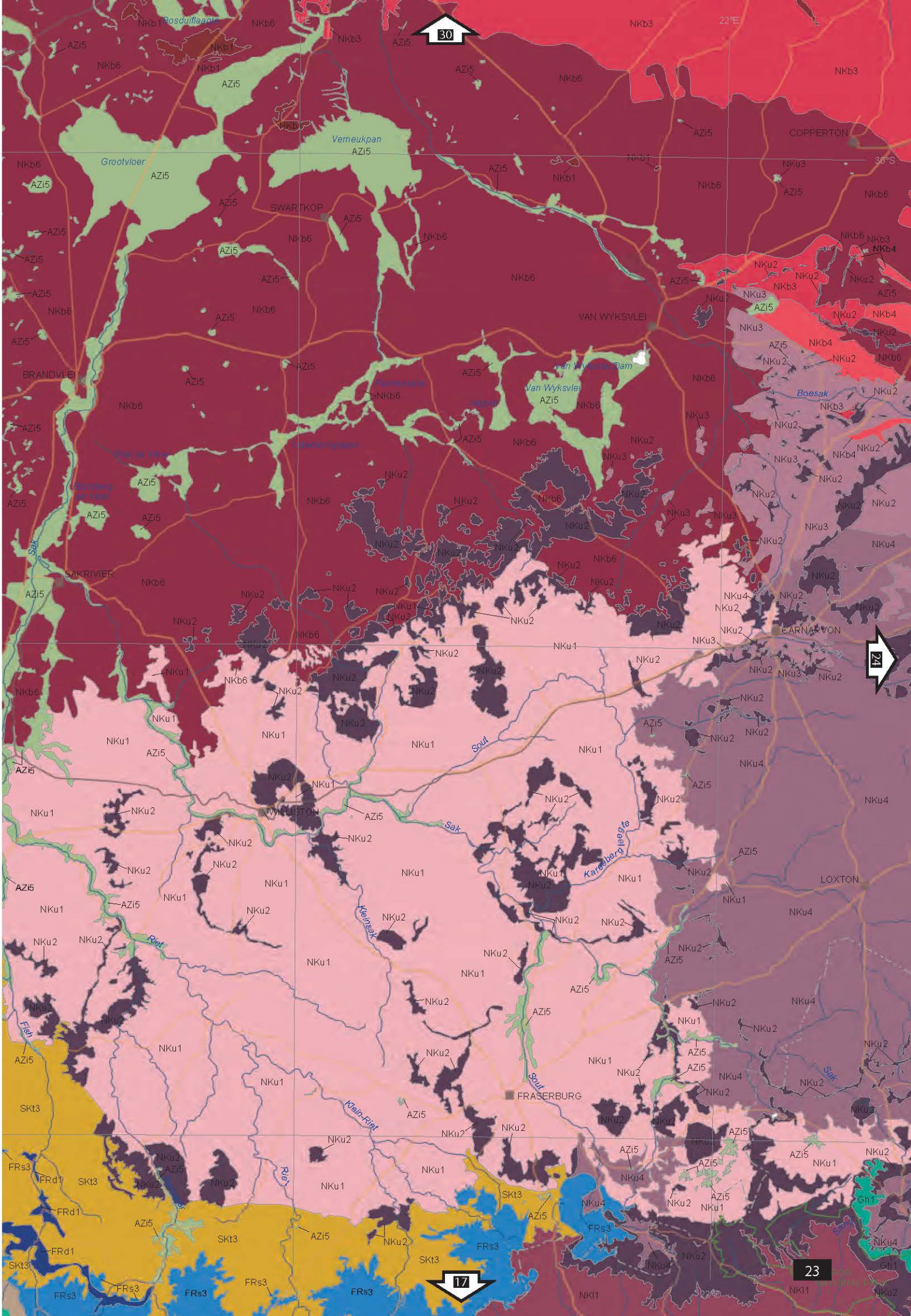

24
17
BEAUFORT WEST
ABERDEEN
RIETBRON
WILLOWMORE
KLAARSTROOM
DE RUST
DYSSELSDORP
UNIONDALE
AVONTUUR
HAARLEM
KRAKEELRIVIER
JOUBERTINA
STUDTIS
KAREEDOUW
CLARKSON
OUBOSSTRAND
NATURE'S VALLEY
PLETTENBERGBAAI
Plettenberg Bay
KNYSNA
Knysna Lagoon
WILDERNESS
SEDGEFIELD
HEROLD'S BAY
GROOT-BRAKRIVIER
Mossel Bay
HERALDTON
KAMMANASSIE
KARATARA
Amos
Traka
Soul
Karlega
Groot
Kouga
Keurbooms
Kammanassie
De Hoop Dam
Beervlei Dam
33°S
23°E
24°E

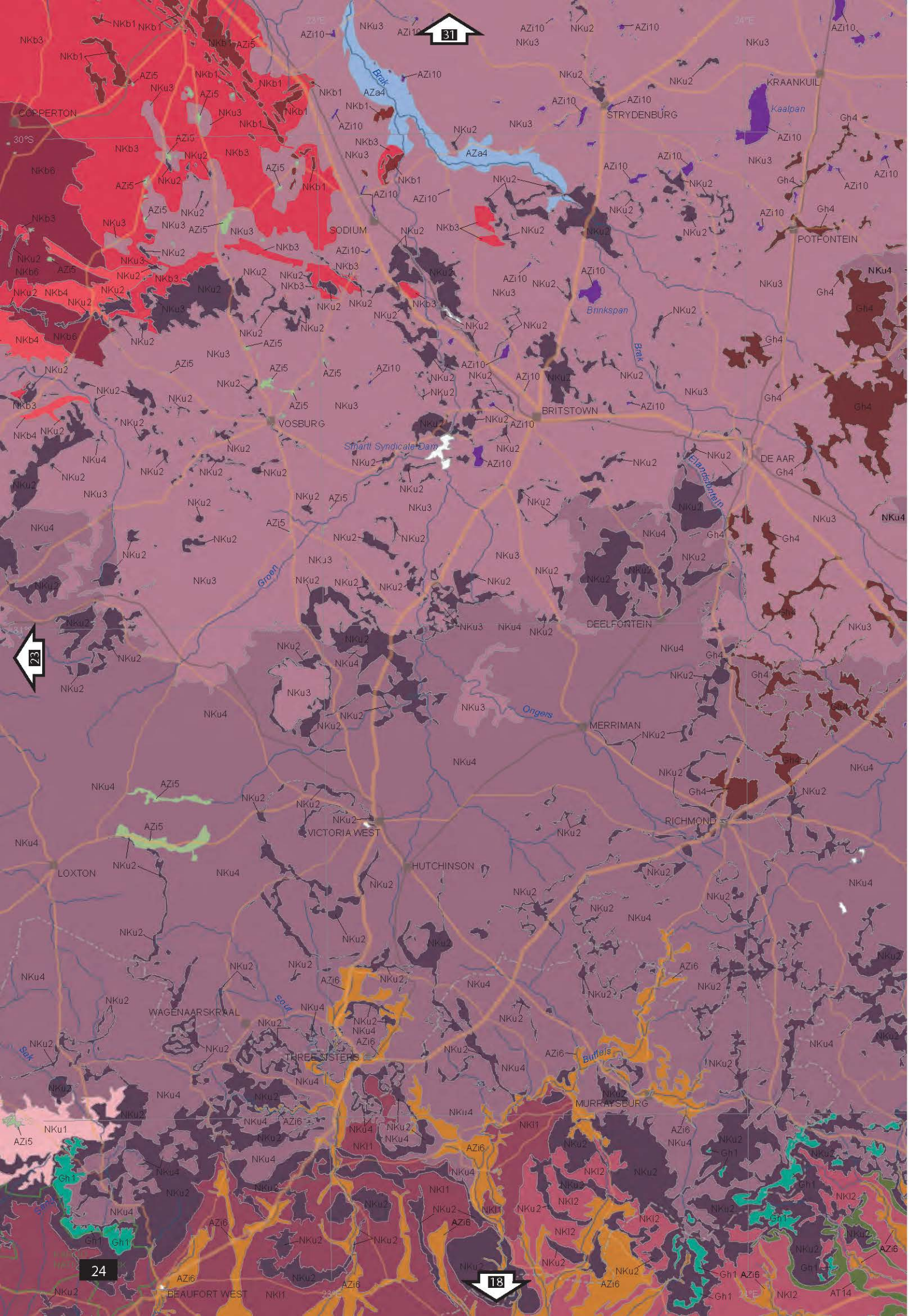

GRAAFF-REINET
PETERSBURG
25°E
26°E
25
MORTIMER
PEARSTON
SOMERSET EAST
BEDFORD
ADELAIDE
LOCHHOUSE
JANSENVILLE
MIDDLETON
WATERFORD
MOUNT STEWART
Darlington Dam
Little Fish
Sundays
RIEBEEK-EAST
GRAHAMSTOWN
ALICEDALE
KIRKWOOD
PATERSON
SALEM
ADDO
GREATER ADDO ELEPHANT NATIONAL PARK
CANNONVALE
ALEXANDRIA
Alexandria Forest
Cape Padrone
Algoa Bay
PORT ELIZABETH
Cape Recife
SKOENMAKERSKOP
SEA VIEW
JEFFREYS BAY
HUMANSDORP
KRUISFONTEIN
HANKEY
PATENSIE
UITENHAGE
DESPATCH
LOERIE
St Francis Bay
OYSTER BAY
CAPE ST FRANCIS
KwaZunga
Gamtoos
Elands
Kouga
Bushmans
20
33°S
34°S
25°E
26°E

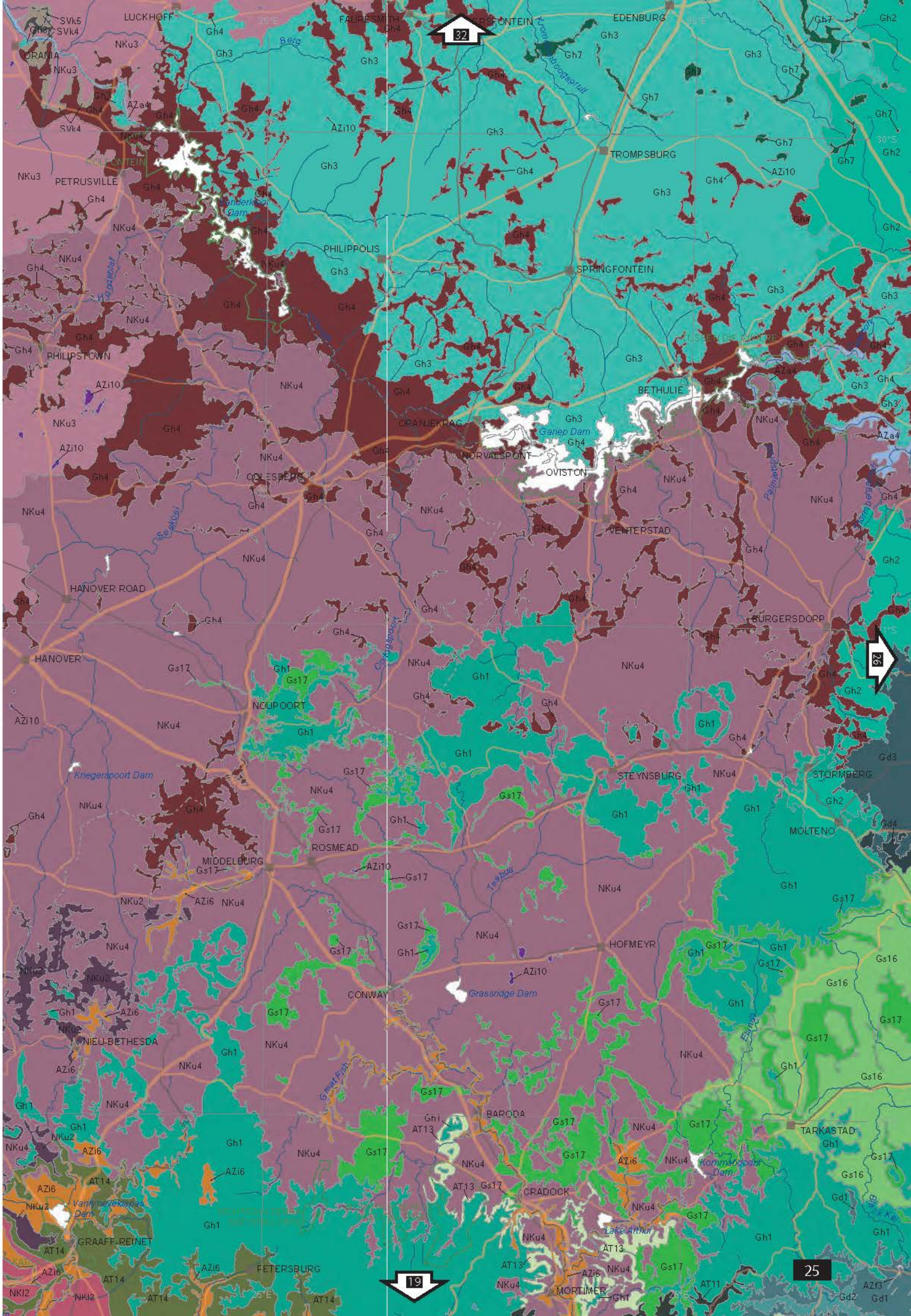

26
BOLO
CATHCART
BUTTERWORTH
20
BALFOUR
SEYMOUR
HOGSBACK
STUTTERHEIM
DÖHNE
EMGWALI
CENTANE
KOMGA
KEISKAMMAHOEK
FORT BEAUFORT
ALICE
MIDDLEDRIFT
KWAMANGATI
BHISHO
KWA MAHOMBA
HAGA-HAGA
MACLEANTOWN
QHOLORHA
KEI MOUTH
BERLIN
ZWELITSHA
MDANTSANE
EAST LONDON
KIDD'S BEACH
KAYSER'S BEACH
WESLEY
HAMBURG
GRAHAMSTOWN
SALEM
BATHURST
Waterloo Bay
PORT ALFRED
KENTON ON SEA
BOESMANSRIVIERMOUND
Cape Padrone
GREAT FISH RIVER COMPLEX
19
27
OLD MORLEY
ELLIOTDALE
ENTSHATSHONGO
NQAMAKWE
THE HAVEN
DWESA-CWEBE
MAZEPPA BAY
28°E
29°E
32°S
33°S
34°S
27°E

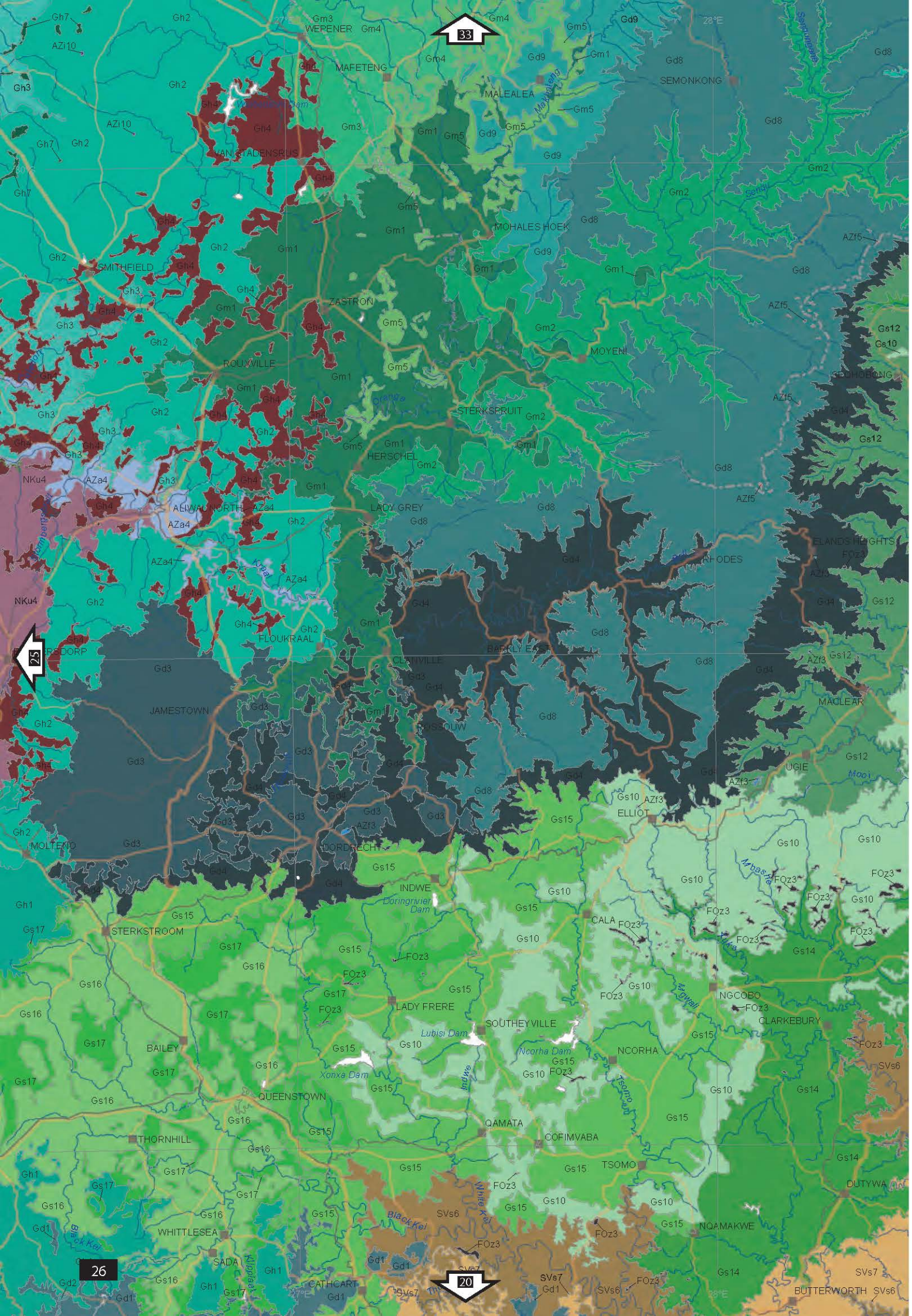

LEIPOLDTVILLE
REDELINGHUYS
AURORA
VELDDRIF
ST. HELENA BAY
PATERNOSTER
VREDENBURG
SALDANHA
HOPEFIELD
LANGEBAAN
WEST COAST NATIONAL PARK
YZERFONTEIN
DARLING
St. Helena Bay
Saldanha Bay
Langebaan Lagoon
Yzerfontein point
Dassen Island
Bird
Verlorevlei
Groen
Spoeg
Bitter
Platklippunt
Hondeklip Bay
Plat Bay
Island Point
Langklip
Blinkwater Bay
Olifants River Mouth
Donkin's Bay
Lambert's Bay
KLEINSEE
Stompneus Bay
Melkbospunt
Swartklip
NABABEEP
SPRINGBOK
KOMAGGAS
GOEGAP
CAROLUSBERG
NAMAQUA NATIONAL PARK
SOEBATSFONTEIN
KOINGNAAS
KAMIESKROON
HONDEKLIPBAAI
WALLEKRAAL
SPOEGRIVIER
LELIEFONTEIN
KARKAMS
GARIES
KOTZESRUS
RIETPOORT
BITTERFONTEIN
STRANDFONTEIN
DORINGBAAI
18°E
33°S
28
22
21

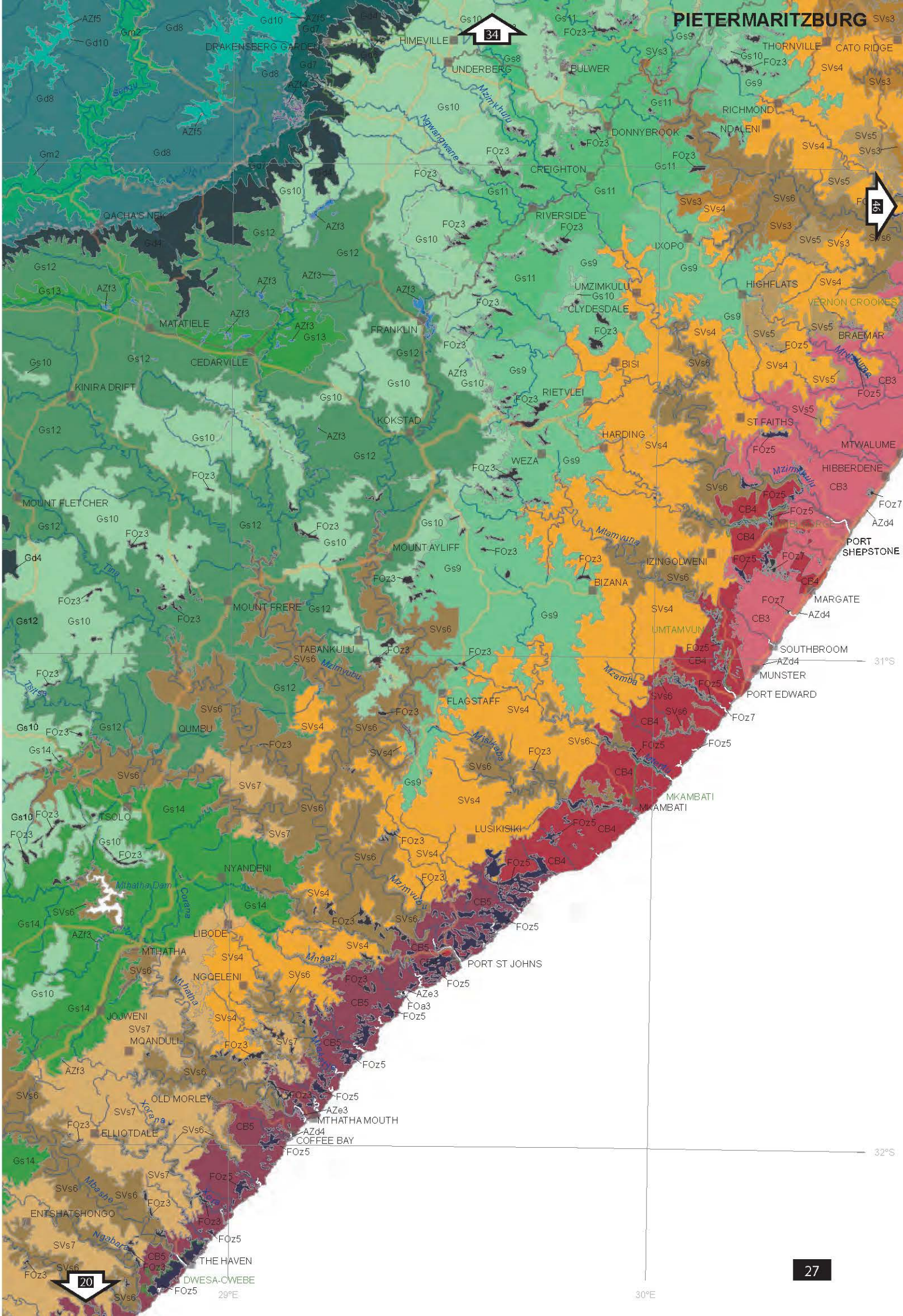

19°E
20°E
29
21
22
16
GAMOEP
KLIPRAND
LOERIESFONTEIN
BITTERFONTEIN
NUWERUS
MOEDVIL
LUTZVILLE
VANRHYNSDORP
VREDENDAL
KLAWER
STRANDFONTEIN
DORINGBAAI
LAMBERT'S BAY
GRAAFWATER
LEIPOLDTVILLE
ELAND'S BAY
NIEUWOUDTVILLE
CALVINIA
DORINGBOS
MIDDELPOS
TANKWA
NATIONAL PARK
Boslus se Pan
Buffels
Olifants River Mouth
Donkin's Bay
Lambert's Bay
Eland's Bay
Verloreviei
Oorlogskloof
Doring
Vers
Hol
Olifants
Bos
Tra-Tra
Tanqua
SKn1
SKn3
SKn5
SKn6
SKt1
SKt2
SKt3
SKk1
SKk3
SKk4
SKk5
SKk7
SKs7
SKs11
SKs12
SKs13
FRg1
FRd1
FRd2
FRs1
FRs2
FRs3
FFs1
FFs2
FFs3
FFs4
FFd1
FFd2
FFb1
FFq2
AZi1
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AZi5
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AZe1
AZe2
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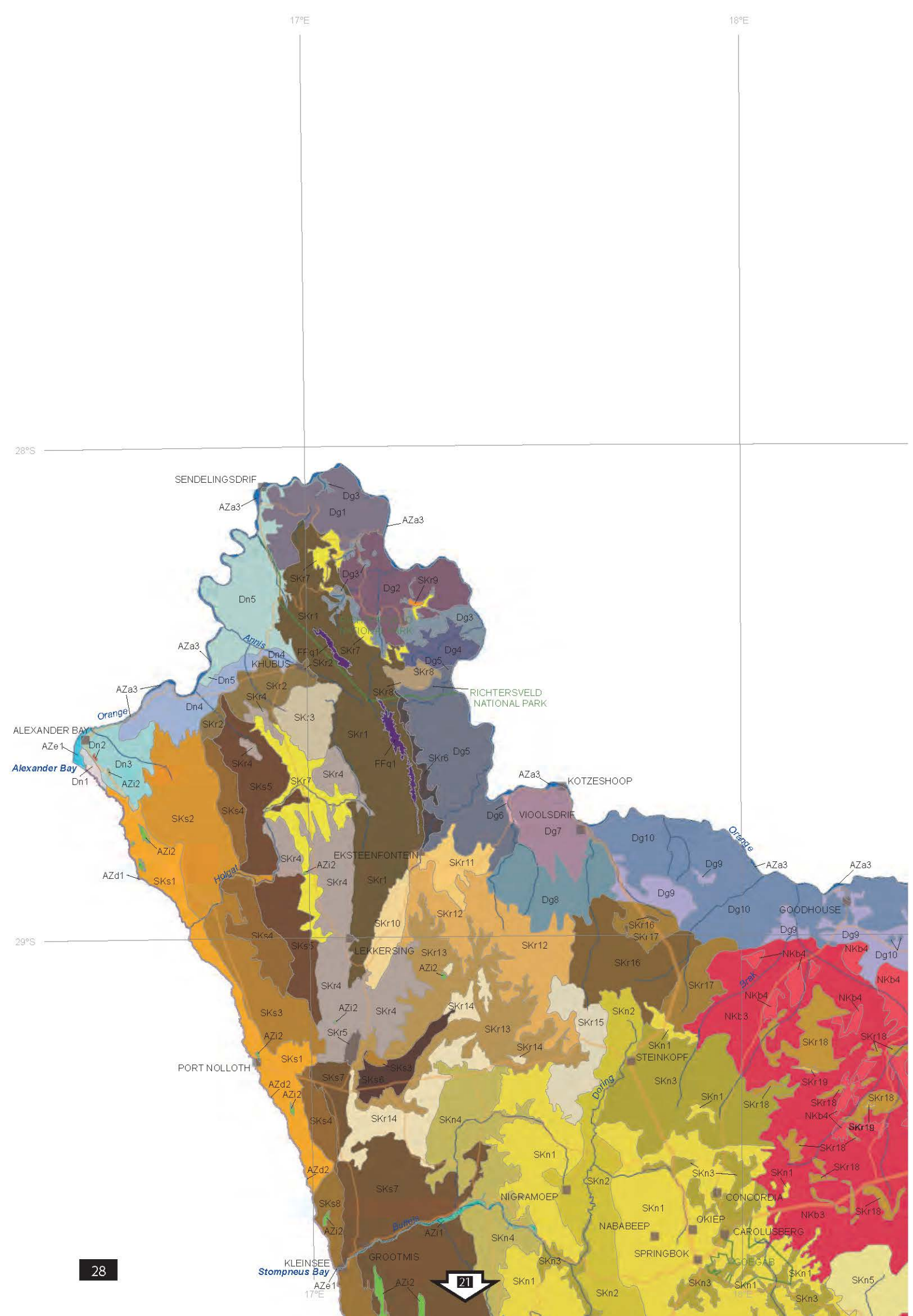

30
24
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COPPERTON
VAN WYKSVLEI
BRANDVLEI
SWARTKOP
SAKRIVIER
CARNARVON
LOXTON
VICTORIA WEST
FRASERBURG
Verneukpan
Grootvloer
Van Wyksvlei
Boesak
Sak
Sout
Riet
Fish
Klein-Riet
Kleinsak
Karreebergbeegte
Vanwyksvlei Dam
NKb1
NKb3
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FRs3
FRd1
Gh1
NKl1

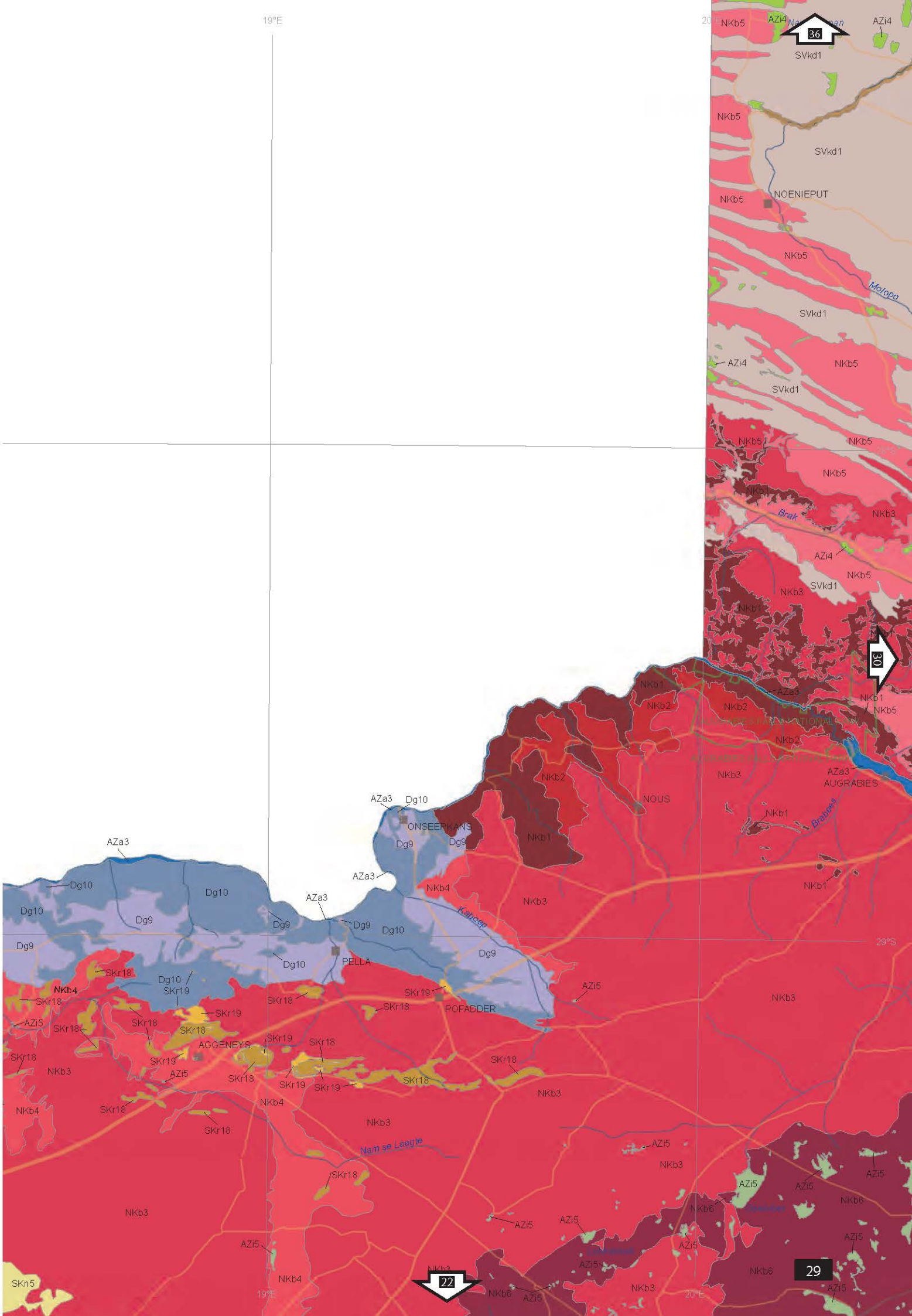

COPPERTON
SODIUM
VOSBURG
BRITSTOWN
KRAANKUIL
STRYDENBURG
POTFONTEIN
DE AAR
DEELFONTEIN
MERRIMAN
RICHMOND
VICTORIA WEST
HUTCHINSON
LOXTON
WAGENAARSKRAAL
THREE SISTERS
MURRAYSBURG
BEAUFORT WEST
Brak
Kaalpan
Brinkspan
Smartt Syndicate Dam
Elandsfontein
Groen
Ongers
Sout
Sak
Buffels
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24°E
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18

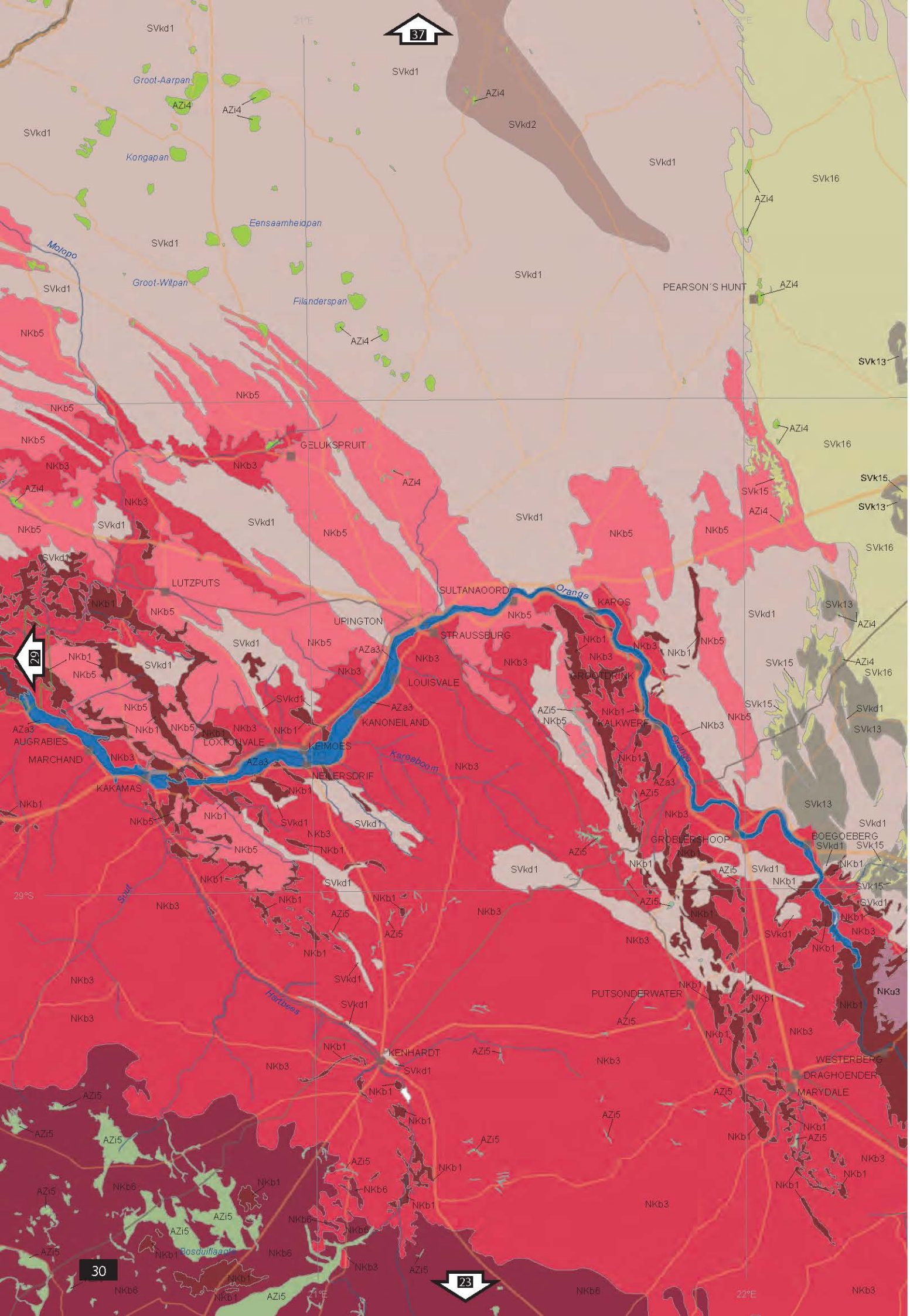

LUCKHOFF
FAURESMITH
EDENBURG
ORANJA
PETRUSVILLE
PHILIPPOLIS
SPRINGFONTEIN
TROMPSBURG
PHILIPSTOWN
BETHULIE
ORANJERAG
Ganap Dam
NORVALSPONT
OVISTON
COLESBERG
VENTERSTAD
HANOVER ROAD
BURGERSDORP
HANOVER
NOUPOORT
Knegerspoort Dam
STEYNSBURG
STORMBERG
MOLTENO
ROSMEAD
MIDDELBURG
HOFMEYR
CONWAY
Grassnage Dam
NIEU-BETHESDA
BARODA
TARKASTAD
CRADOCK
Lake Arthur
GRAAFF-REINET
FETERSBURG
MORTIMER
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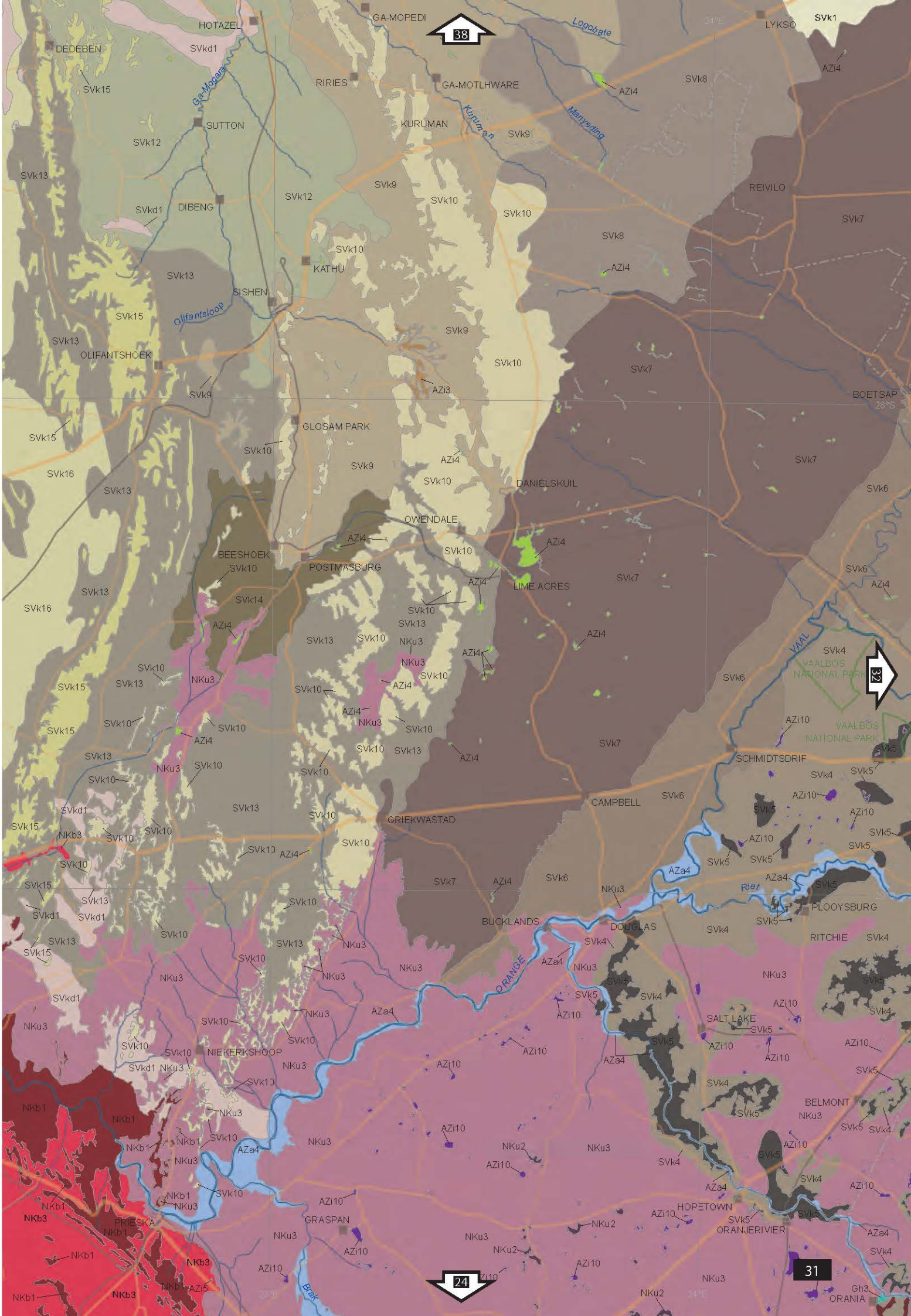

WEPENER
MAFETENG
MALEALEA
SEMONKONG
VAN STADENSRUS
MOHALES HOEK
SMITHFIELD
ZASTRON
ROUXVILLE
MOYENI
STERKSPRUIT
HERSCHEL
ALIWAL NORTH
LADY GREY
RHODES
ELANDS HEIGHTS
FLOUKRAAL
CLANVILLE
JAMESTOWN
ROSSOUW
MACLEAR
UGIE
ELLIOT
MOLTENO
DORDRECHT
INDWE
STERKSTROOM
CALA
NGCOBO
CLARKEBURY
LADY FRERE
SOUTHEYVILLE
BAILEY
NCORHA
QUEENSTON
QAMATA
COFIMVABA
THORNHILL
TSOMO
DUTYWA
WHITTLESEA
SADA
CATHCART
NQAMAKWE
BUTTERWORTH
Doringrivier Dam
Lubisi Dam
Ncorha Dam
Xonxa Dam
Orange
Caledon
Bamberg
Mooi
Mbashe
Kei
Indwe
Tsomo
Black Kei
White Kei
Klipplaat
Senqunyane
Senqu
Maqalaqala
33
25
26
20
27°E
28°E

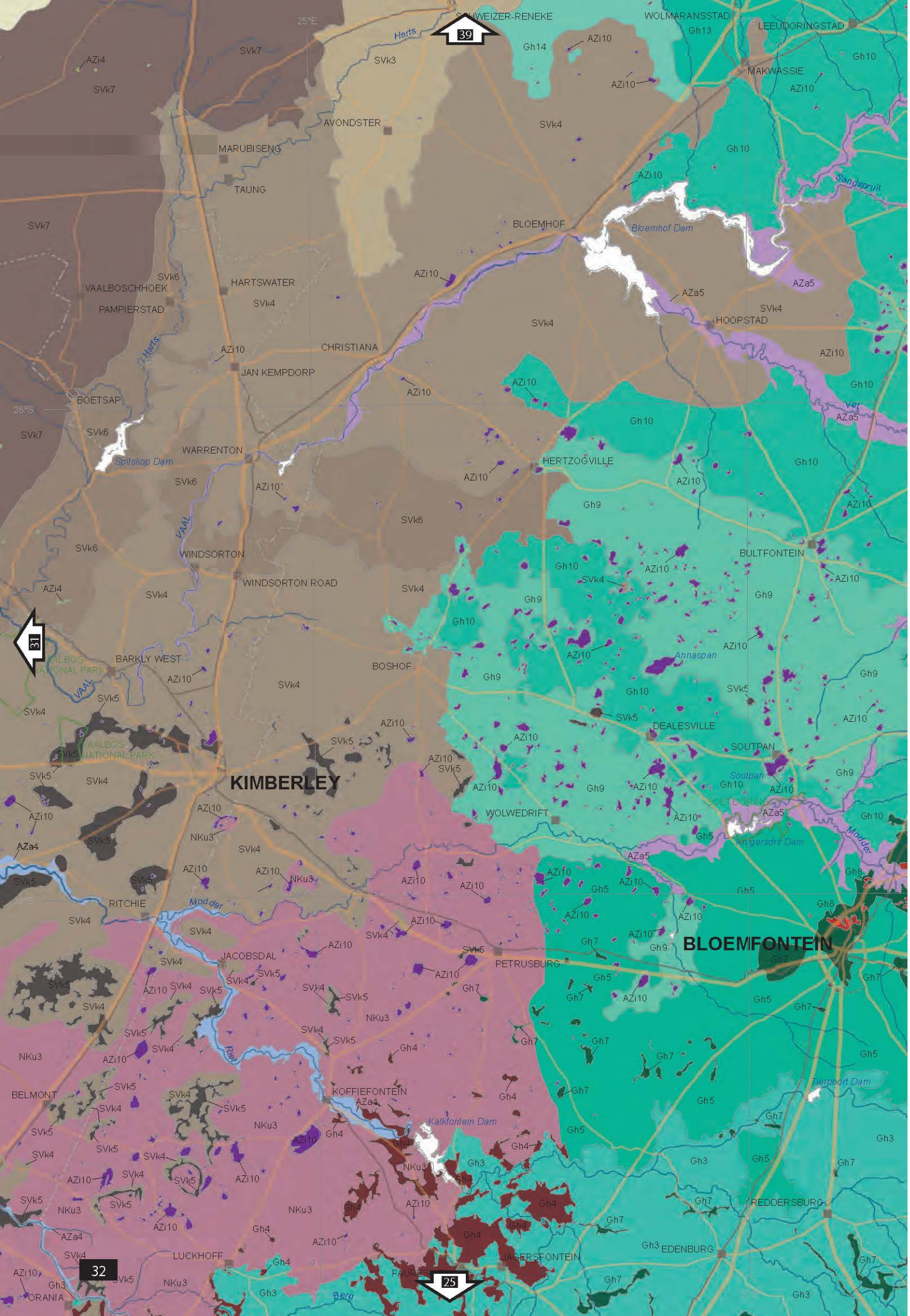

PIETERMARITZBURG
HIMEVILLE
DRAKENSBERG GARDEN
UNDERBERG
BULWER
THORNVILLE
CATO RIDGE
RICHMOND
NDALENI
DONNYBROOK
CREIGHTON
RIVERSIDE
IXOPO
HIGHFLATS
VERNON CROOKES
BRAEMAR
UMZIMKULU
CLYDESDALE
QACHA'S NEK
MATATIELE
FRANKLIN
CEDARVILLE
KINIRA DRIFT
BISI
RIETVLEI
KOKSTAD
HARDING
ST FAITHS
MTWALUME
HIBBERDENE
WEZA
MOUNT FLETCHER
MOUNT AYLIFF
IZINGOLWENI
BIZANA
MOUNT FRERE
MARGATE
UMTAMVUNA
SOUTHBROOM
TABANKULU
MUNSTER
PORT EDWARD
FLAGSTAFF
QUMBU
PORT SHEPSTONE
MKAMBATI
LUSIKISIKI
TSOLO
NYANDENI
LIBODE
MTHATHA
PORT ST JOHNS
NGQELENI
JOJWENI
MQANDULI
OLD MORLEY
MTHATHA MOUTH
ELLIOTDALE
COFFEE BAY
ENTSHATSHONGO
THE HAVEN
DWESA-CWEBE
Mzimkhulu
Ngwangwane
Mtamvuna
Mzimvubu
Mzamba
Mbashe
Ngabara
Mthatha Dam
Corana
Mngazi
Mtentu
Ting
Tsitsa
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Mzimayi
Mtwalume
Mishikaba
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32°S
29°E
30°E
27

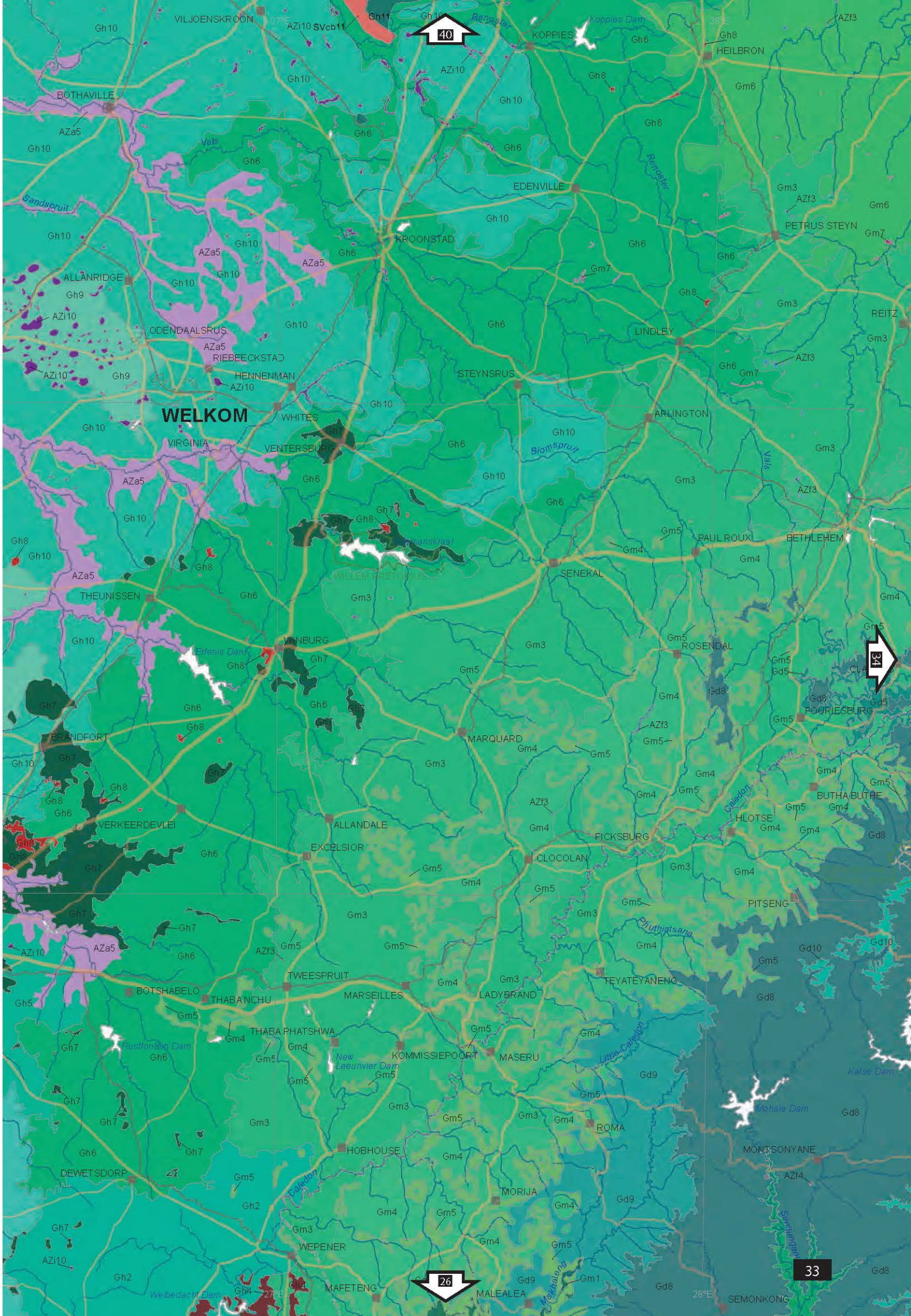

17°E
18°E
28°S
29°S
SENDELINGSDRIF
AZa3
Dg3
Dg1
AZa3
SKr7
Dg3
Dg2
SKr9
Dn5
SKr1
Dg3
Anpis
AZa3
Dn4
FFq1
SKr7
Dg4
KHUBUS
SKr2
Dg5
SKr8
Dn5
AZa3
SKr2
SKr8
RICHTERSVELD
NATIONAL PARK
SKr4
Orange
Dn4
SKr3
SKr2
ALEXANDER BAY
SKr1
AZe1
Dn2
Dg5
SKr4
FFq1
SKr6
Alexander Bay
Dn3
AZa3
KOTZESHOOP
Dn1
AZi2
SKr7
SKr4
SKs5
Dg6
VIOOLSDRIF
SKs4
Dg7
Dg10
SKs2
Orange
AZi2
SKr4
EKSTEENFONTEIN
AZi2
SKr11
Dg9
AZa3
AZa3
AZd1
SKs1
Holgat
SKr4
SKr1
Dg9
Dg8
SKr12
Dg10
GOODHOUSE
SKr10
SKr16
Dg9
Dg9
SKs4
SKs5
LEKKERSING
SKr13
SKr12
SKr17
NKb4
NKb4
Dg10
SKr16
AZi2
NKb4
SKr4
SKr17
Orak
NKb4
AZi2
SKr14
SKn2
NKb4
SKs3
SKr4
NKb3
SKr15
SKr18
SKr18
AZi2
SKr5
SKr13
SKn1
SKr14
STEINKOPF
PORT NOLLOTH
SKs1
SKs3
SKr18
SKs7
SKs6
SKn3
Doring
SKr19
AZd2
AZi2
SKn1
SKr18
SKr18
SKr18
SKs4
SKr14
SKn4
NKb4
SKr19
SKr18
SKn1
AZd2
SKn3
SKr18
SKn1
SKs7
SKn2
NIGRAMOEP
CONCORDIA
SKs8
SKn1
NKb3
SKr18
Buffels
OKIEP
AZi2
AZi1
NABABEEP
CAROLUSBERG
SKn4
GROOTMIS
SPRINGBOK
SKn3
GOEGAB
KLEINSEE
SKn1
SKn1
SKn5
Stompneus Bay
AZi2
SKn1
SKn3
SKn1
AZe1
SKn2
SKn3
17°E
18°E
21

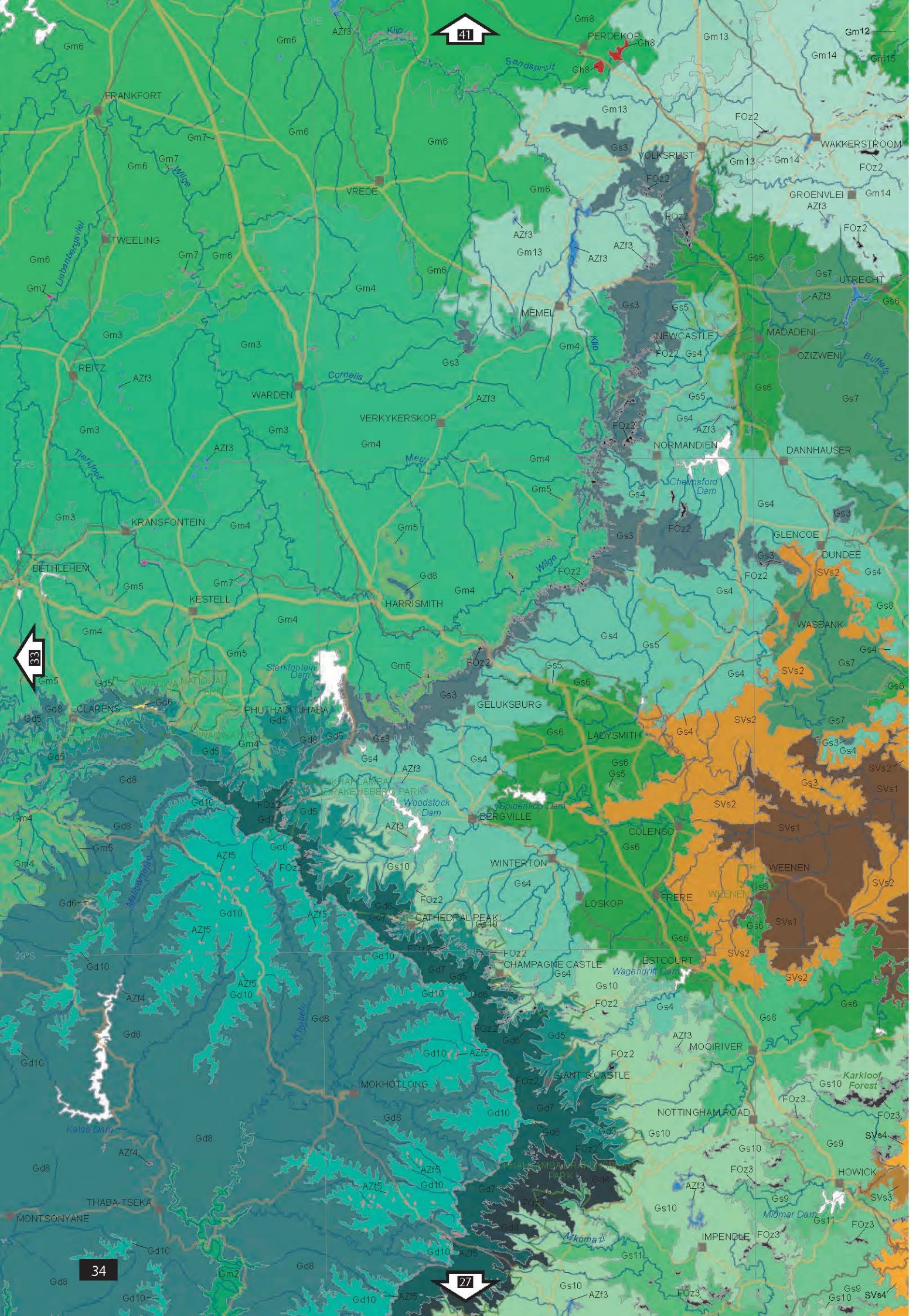

19°E
20°E
29°S
36
30
29
22
SVkd1
NOENIEPUT
Molopo
Brak
Brabees
Kaboep
Nam se Laagte
NOUS
ONSEERKANS
PELLA
POFADDER
AGGENEYS
AUGRABIES
NKb1
NKb2
NKb3
NKb4
NKb5
NKb6
AZa3
AZi4
AZi5
Dg9
Dg10
SKr18
SKr19
SKn5

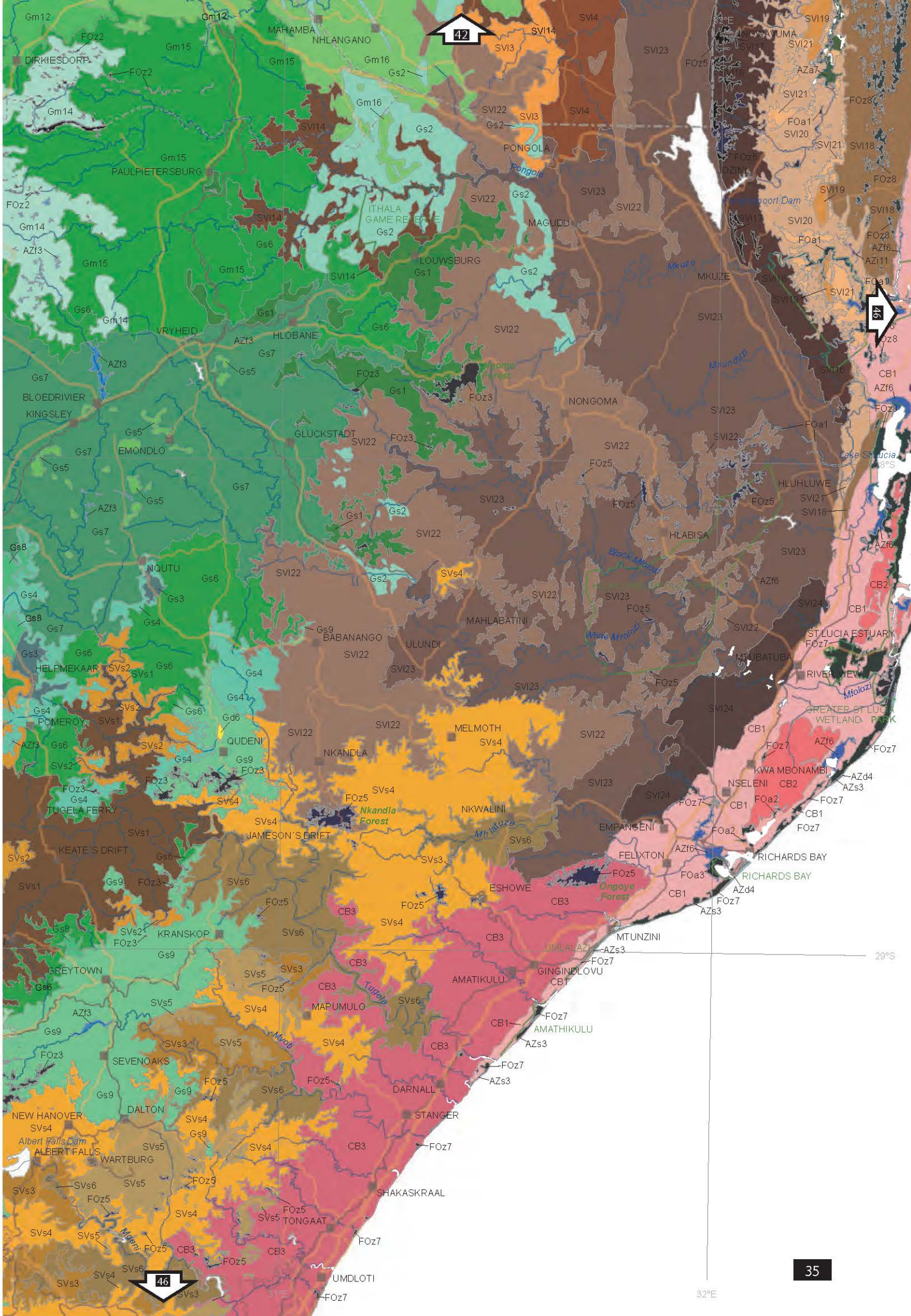

37
29
30
23
21°E
22°E
29°S
Groot-Aarpan
Kongapan
Eensaamheidpan
Molopo
Groot-Witpan
Filanderspan
PEARSON´S HUNT
GELUKSPRUIT
LUTZPUTS
SULTANAOORD
Oranje
KAROS
UPINGTON
STRAUSSBURG
GROOTDRINK
LOUISVALE
KANONEILAND
KALKWERF
AUGRABIES
LOXTONVALE
KEIMOES
MARCHAND
NEILERSDRIF
KAKAMAS
Karoebbo.m
Soul
Hartbees
PUTSONDERWATER
KENHARDT
GROBLERSHOOP
BOEGOEBERG
WESTERBERG
DRAGHOENDER
MARYDALE
Bosduiflaagte
SVkd1
SVkd2
SVk16
SVk15
SVk13
NKb5
NKb3
NKb1
NKb6
NKu3
AZi4
AZi5
AZa3

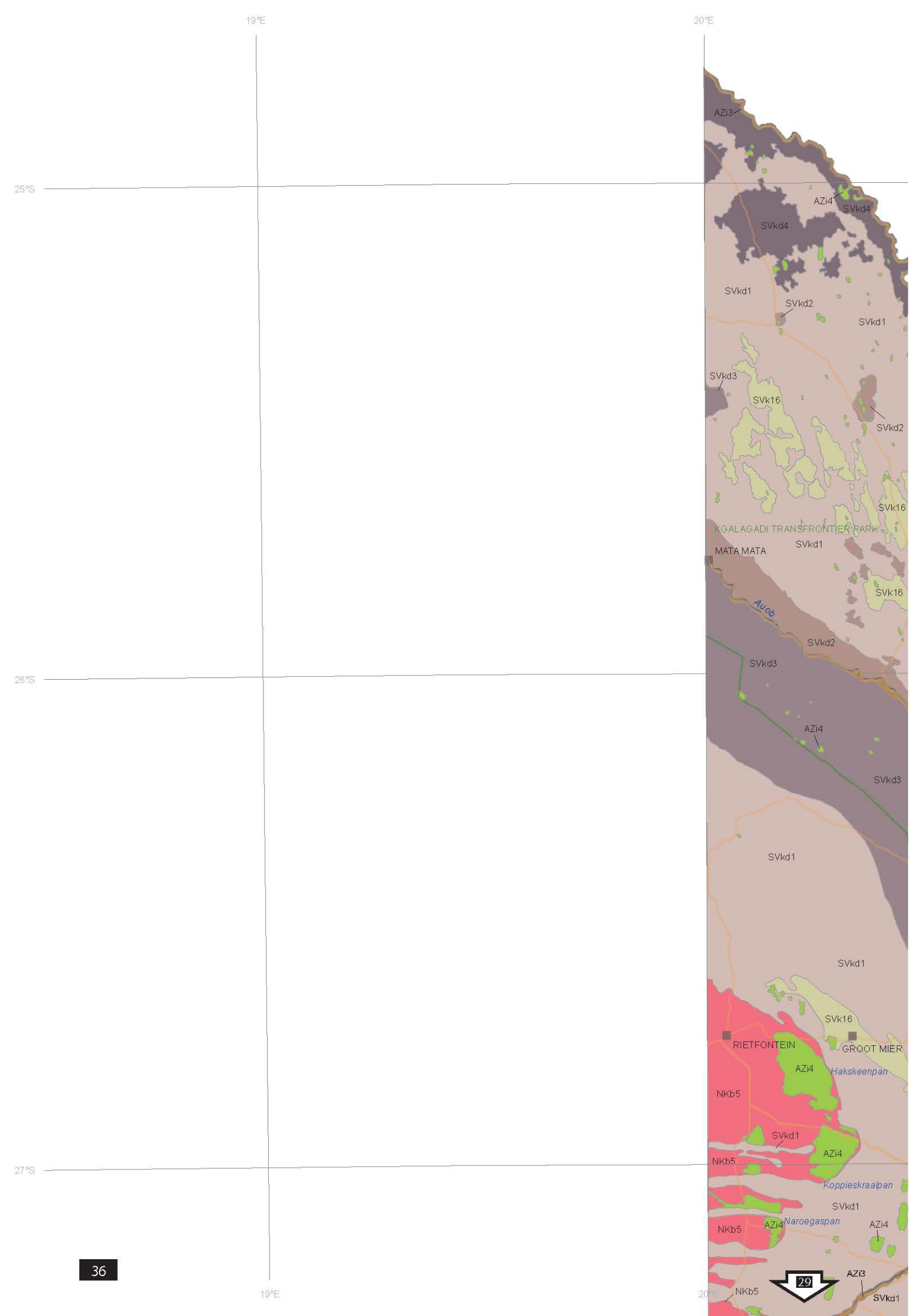

HOTAZEL
GA-MOPEDI
38
LYKSO
SVk1
DEDEBEN
SVkd1
SVk15
Ga-Mogara
RIRIES
GA-MOTLHWARE
Logobate
AZi4
SVk8
SUTTON
KURUMAN
Kuruman
Manyeding
SVk9
SVk12
SVk13
DIBENG
REIVILO
SVk7
SVk10
KATHU
SISHEN
Olifantsloop
OLIFANTSHOEK
AZi3
BOETSAP
GLOSAM PARK
SVk16
DANIELSKUIL
SVk6
OWENDALE
BEESHOEK
POSTMASBURG
LIME ACRES
SVk14
NKu3
VAAL
SVk4
VAALBOS NATIONAL PARK
32
AZi10
SCHMIDTSDRIF
SVk5
CAMPBELL
GRIEKWASTAD
NKb3
AZa4
Riet
PLOOYSBURG
BUCKLANDS
DOUGLAS
RITCHIE
ORANGE
SALT LAKE
NIEKERKSHOOP
NKb1
BELMONT
NKu2
HOPETOWN
ORANJERIVIER
PRIESKA
GRASPAN
Brak
ORANIA
Gh3
24
31

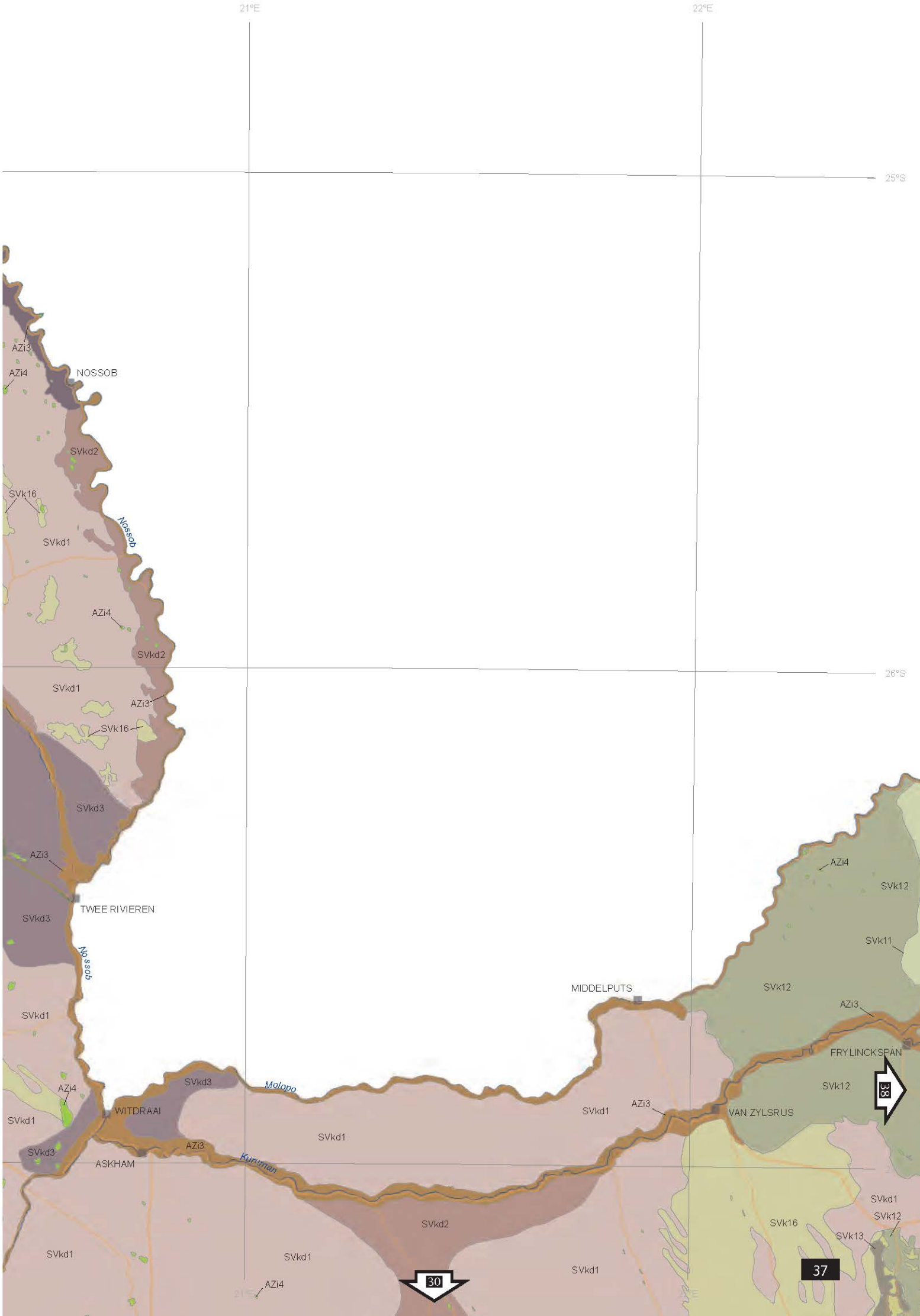

SCHWEIZER-RENEKE
WOLMARANSSTAD
LEEUDORINGSTAD
MAKWASSIE
AVONDSTER
MARUBISENG
TAUNG
BLOEMHOF
Bloemhof Dam
Sandspruit
VAALBOSCHHOEK
HARTSWATER
PAMPIERSTAD
HOOPSTAD
CHRISTIANA
JAN KEMPDORP
BOETSAP
WARRENTON
Spitskop Dam
HERTZOGVILLE
WINDSORTON
WINDSORTON ROAD
BULTFONTEIN
BARKLY WEST
BOSHOF
Annaspan
DEALESVILLE
SOUTPAN
Soutpan
KIMBERLEY
WOLWEDRIFT
Krigersdrif Dam
RITCHIE
BLOEMFONTEIN
JACOBSDAL
PETRUSBURG
BELMONT
KOFFIEFONTEIN
Kalkfontein Dam
Tierpoort Dam
REDDERSBURG
LUCKHOFF
JAGERSFONTEIN
EDENBURG
FAURE
ORANIA
Harts
Vaal
Modder
Riet
Vet
Berg
39
31
32
25
25°E
28°S

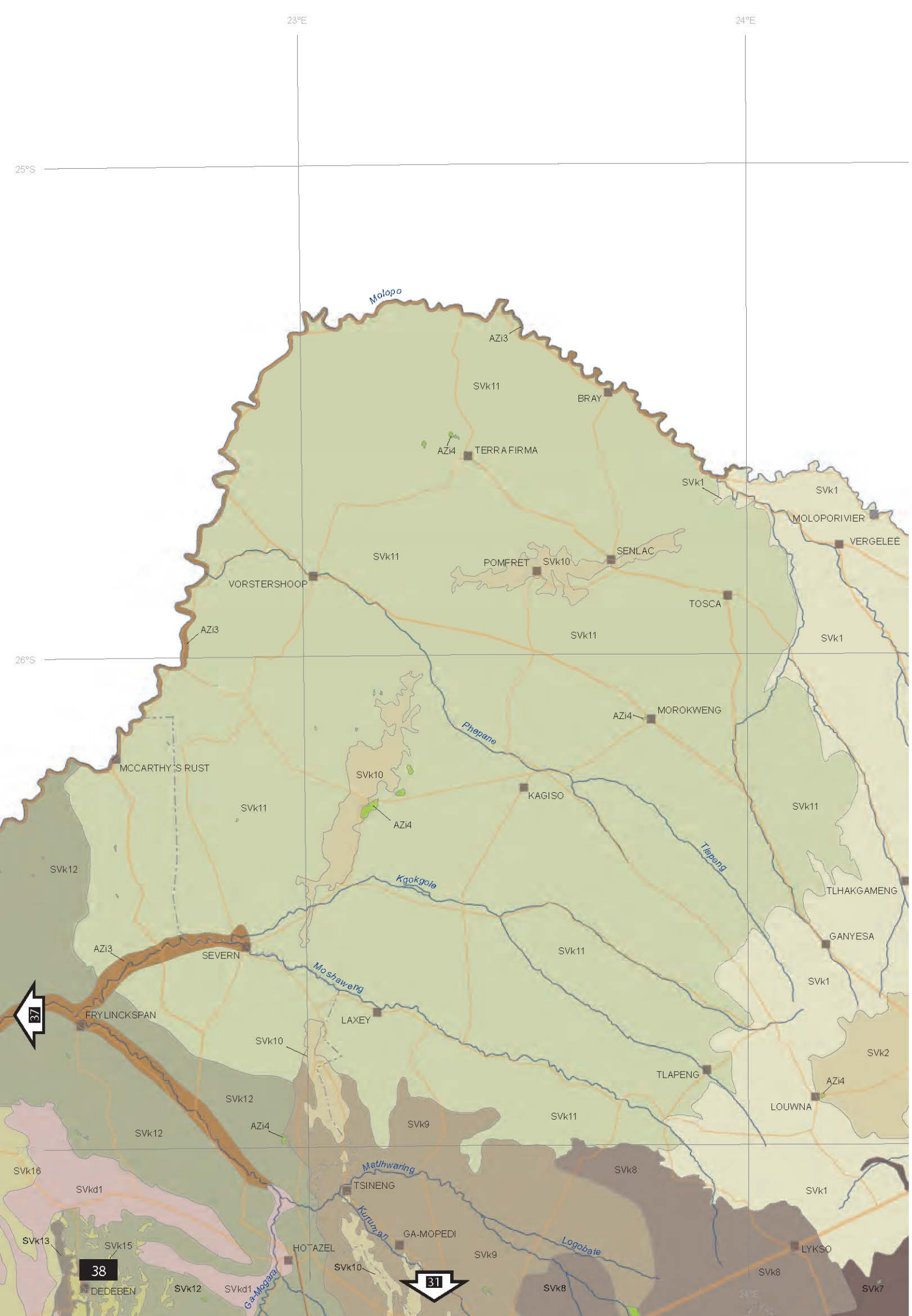

VILJOENSKROON
AZi10 SVcb11
Gh11
Gh10
40
Renoster
Koppies Dam
KOPPIES
Gh8
HEILBRON
AZf3
Gm6
BOTHAVILLE
AZa5
Vals
Gh6
Sandspruit
EDENVILLE
Gm3
PETRUS STEYN
Gm7
KROONSTAD
AZa5
ALLANRIDGE
Gh9
AZi10
ODENDAALSRUS
RIEBEECKSTAD
HENNENMAN
STEYNSRUS
LINDLEY
REITZ
WELKOM
WHITES
VIRGINIA
VENTERSBURG
Blomspruit
ARLINGTON
PAUL ROUX
BETHLEHEM
SENEKAL
THEUNISSEN
WINBURG
Erfenis Dam
ROSENDAL
34
POURIESBURG
BRANDFORT
MARQUARD
VERKEERDEVLEI
ALLANDALE
EXCELSIOR
FICKSBURG
CLOCOLAN
HLOTSE
BUTHA BUTHE
Caledon
PITSENG
Phuthiatsana
TWEESPRUIT
BOTSHABELO
THABANCHU
MARSELLES
LADYBRAND
TEYATEYANENG
THABA PHATSHWA
Rustfontein Dam
New Leeuwvier Dam
KOMMISSIEPOORT
MASERU
Little Caledon
Katse Dam
Mohale Dam
ROMA
MONTSONYANE
HOBHOUSE
DEWETSDORP
MORIJA
WEPENER
MAFETENG
26
MALEALEA
Makhaleng
SEMONKONG
33

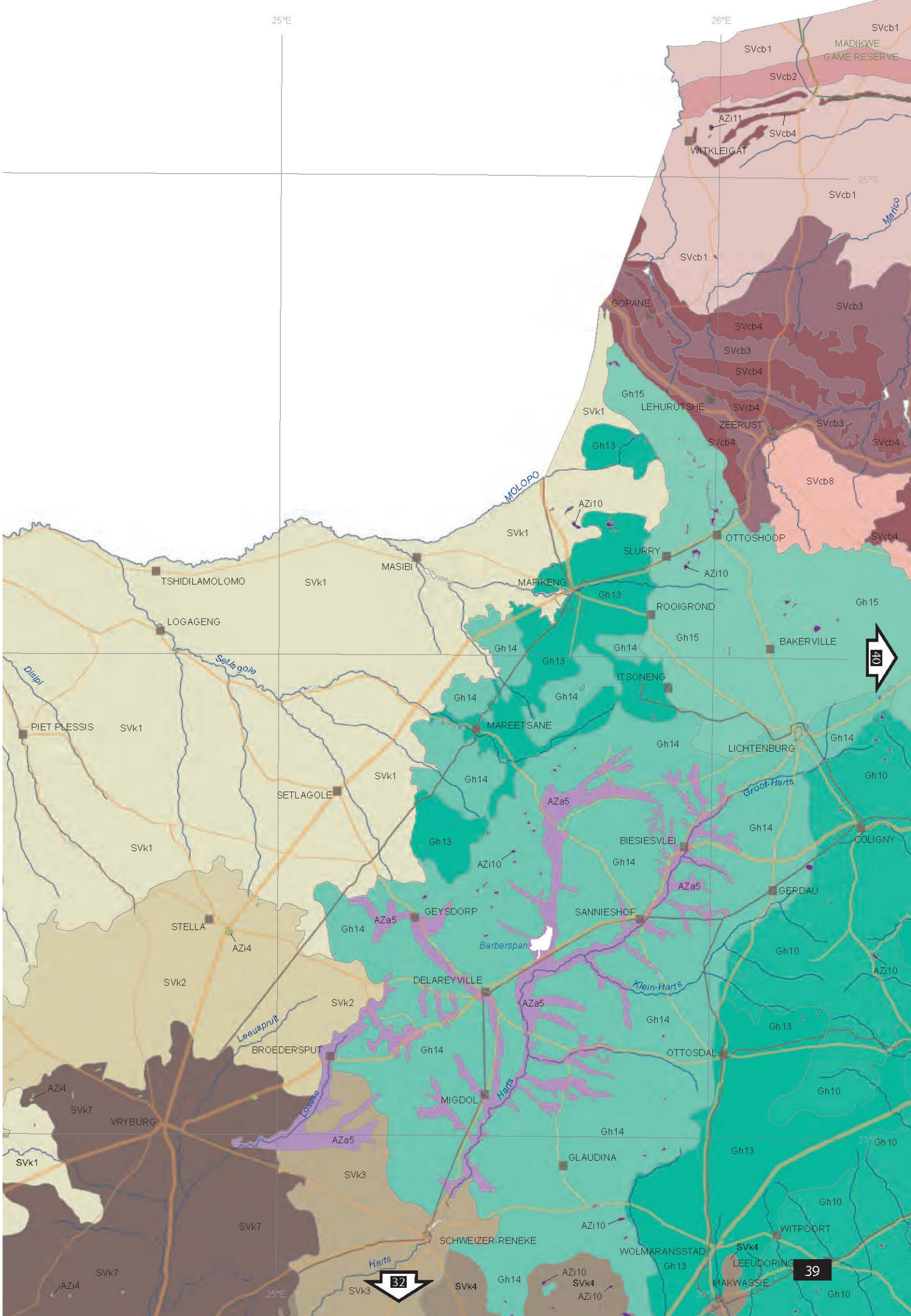

41
33
34
27
29°E
29°S
28°S
PERDEKOP
FRANKFORT
VREDE
TWEELING
REITZ
WARDEN
VERKYKERSKOP
KRANSFONTEIN
BETHLEHEM
KESTELL
HARRISMITH
CLARENS
PHUTHADITJHABA
GELUKSBURG
MEMEL
VOLKSRUST
WAKKERSTROOM
GROENVLEI
UTRECHT
NEWCASTLE
MADADENI
OZIZWENI
NORMANDIEN
DANNHAUSER
GLENCOE
DUNDEE
WASBANK
LADYSMITH
BERGVILLE
COLENSO
WEENEN
FRERE
LOSKOP
WINTERTON
CATHEDRAL PEAK
CHAMPAGNE CASTLE
ESTCOURT
MOOIRIVER
GIANT'S CASTLE
MOKHOTLONG
NOTTINGHAM ROAD
HOWICK
IMPENDLE
THABA-TSEKA
MONTSONYANE
Sandspruit
Klip
Wilge
Liebenbergsvlei
Cornelis
Meul
Tierkloof
Sterkfontein Dam
Woodstock Dam
Spioenkop Dam
Chelmsford Dam
Wagendrift Dam
Mearns Dam
Midmar Dam
Mkomazi
Kalsa Dam
Karkloof Forest
Buffels
Malibamatso
Khubelu
UKHAHLAMBA DRAKENSBERG PARK
WAGWA NATIONAL PARK

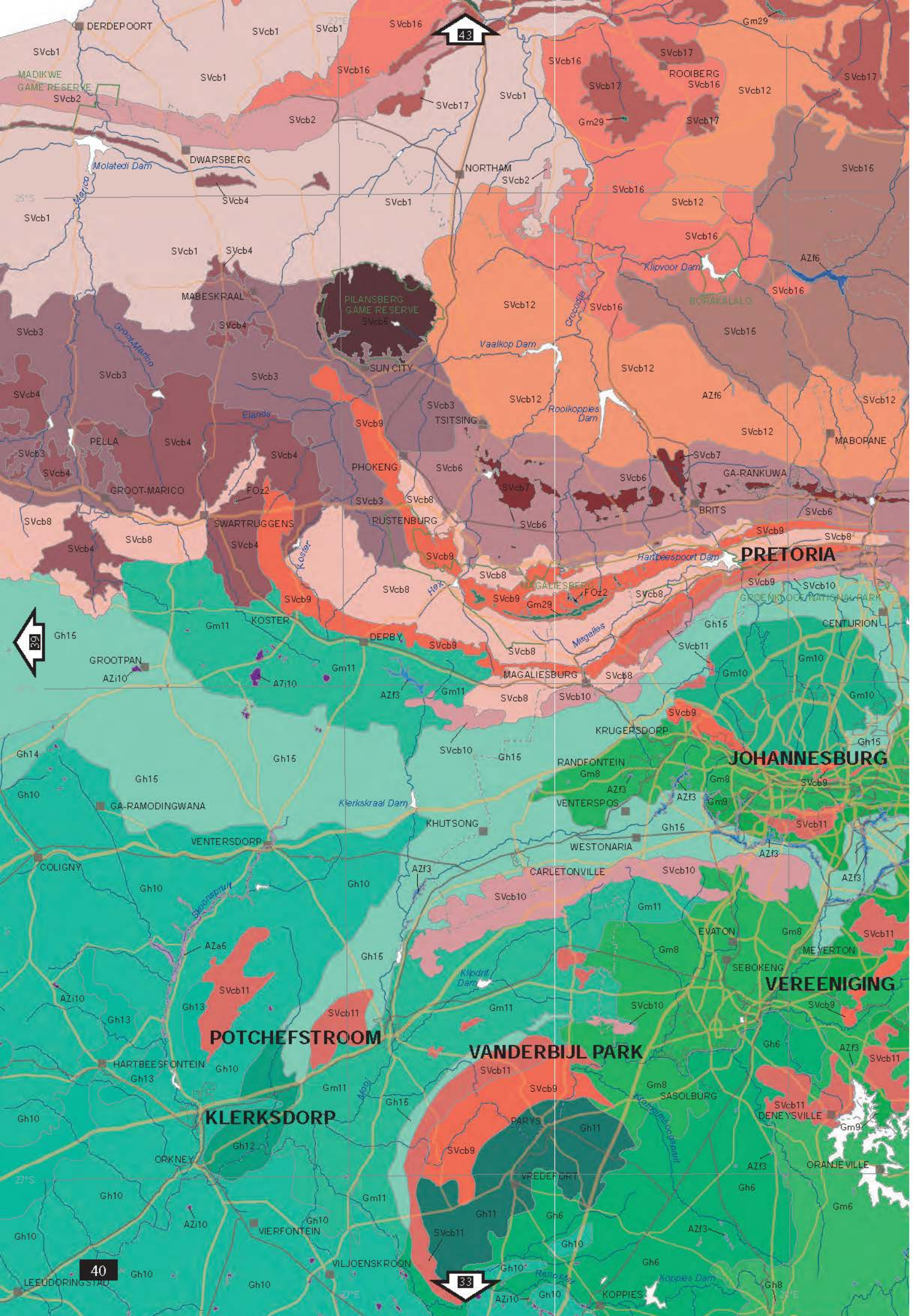

Gm12
FOz2
DIRKIESDORP
MAHAMBA
NHLANGANO
42
SVI4
SVI14
SVI3
SVI23
Gm15
Gm16
Gs2
Gm14
PONGOLA
Pongola
PAULPIETERSBURG
ITHALA GAME RESERVE
SVI22
MAGUDU
Pongolapoort Dam
AZf3
Gs6
LOUWSBURG
Gs1
Mkuze
MKUZE
SVI21
SVI18
SVI19
SVI20
FOa1
FOz8
AZf6
AZi11
CB1
VRYHEID
HLOBANE
AZf7
Gs7
Gs5
Mlumbi Forest
Mfolozi
BLOEDRIVIER
KINGSLEY
FOz3
NONGOMA
GLUCKSTADT
EMONDLO
Lake St Lucia
28°S
HLUHLUWE
FOz5
HLABISA
Black Mfolozi
NQUTU
Gs8
Gs4
Gs3
Gs9
BABANANGO
ULUNDI
MAHLABATINI
White Mfolozi
ST LUCIA ESTUARY
MTUBATUBA
HELPMEKAAR
SVs2
SVs1
Gd6
POMEROY
QUDENI
MELMOTH
SVs4
CB2
CB1
FOz7
AZf6
KWA MBONAMBI
AZd4
AZs3
NSELENI
FOa2
NKANDLA
Nkandla Forest
TUGELA FERRY
NKWALINI
Mhlatuze
EMPANGENI
JAMESON'S DRIFT
KEATE'S DRIFT
FELIXTON
RICHARDS BAY
SVs6
SVs3
ESHOWE
Ongoye Forest
CB3
KRANSKOP
MTUNZINI
UMLALAZI
29°S
GREYTOWN
AMATIKULU
GINGINDLOVU
Tugela
MAPUMULO
AMATHIKULU
Mvoti
SEVENOAKS
DARNALL
DALTON
STANGER
NEW HANOVER
Albert Falls Dam
ALBERT FALLS
WARTBURG
SHAKASKRAAL
TONGAAT
Mdeni
UMDLOTI
46
31°E
32°E
35

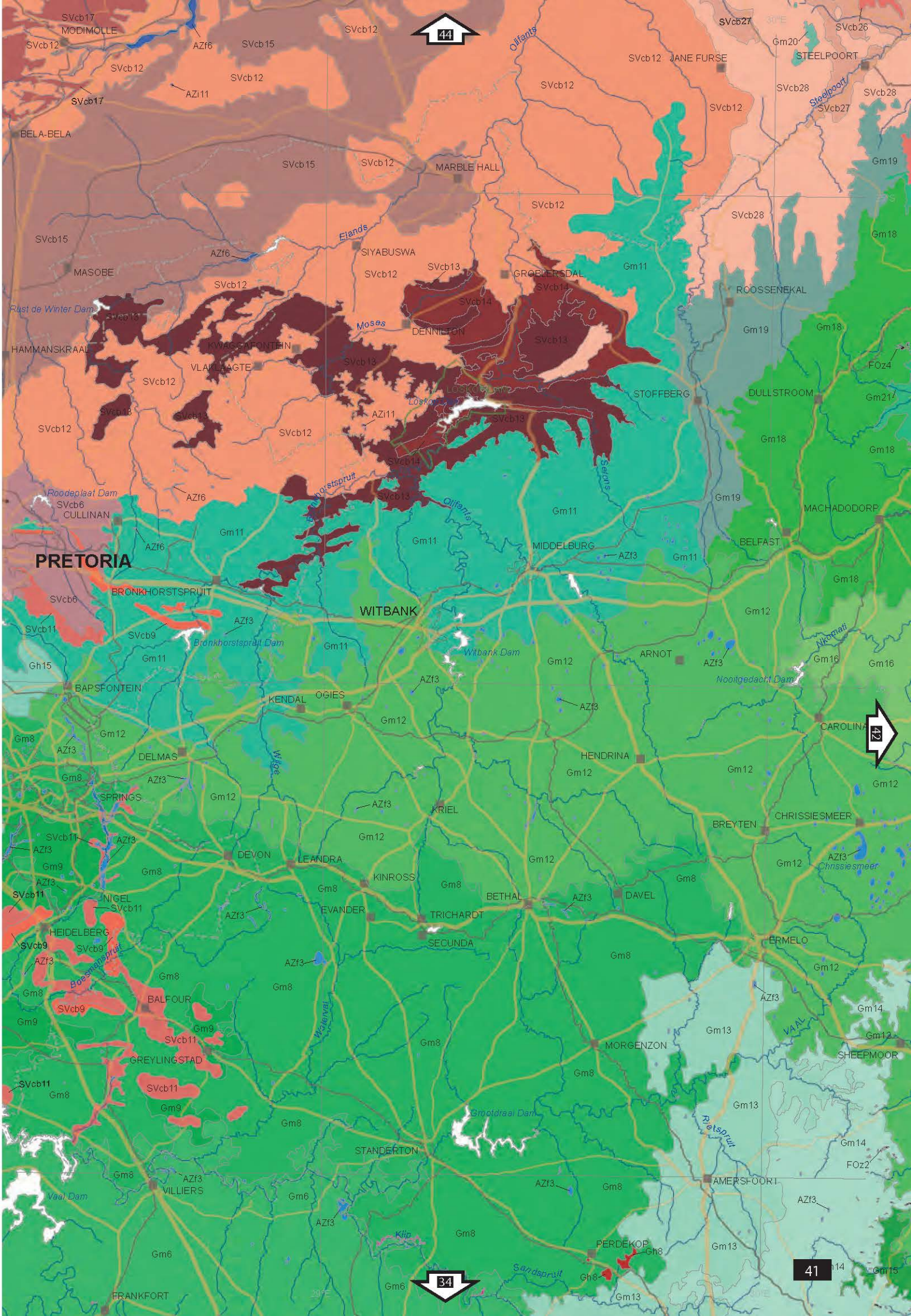

19°E
20°E
25°S
26°S
27°S
AZi3
AZi4
SVkd4
SVkd1
SVkd2
SVkd3
SVk16
KGALAGADI TRANSFRONTIER PARK
MATA MATA
Auob
RIETFONTEIN
GROOT MIER
Hakskeenpan
NKb5
Koppieskraalpan
Naroegaspan
29

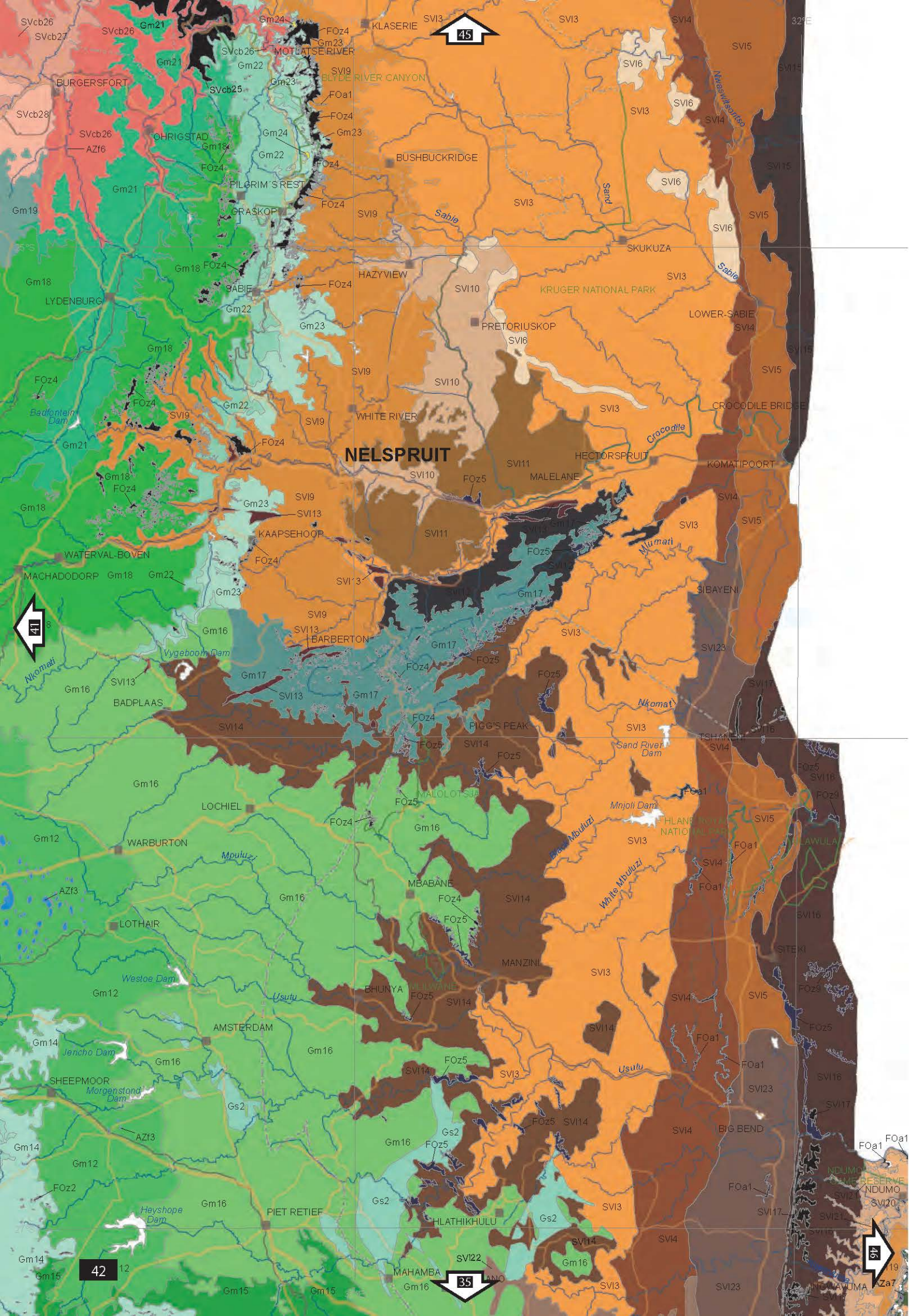

21°E
22°E
25°S
26°S
AZi3
AZi4
NOSSOB
SVkd2
SVk16
SVkd1
Nossob
AZi4
SVkd2
SVkd1
AZi3
SVk16
SVkd3
AZi3
TWEE RIVIEREN
SVkd3
Nossob
SVkd1
AZi4
SVkd1
WITDRAAI
SVkd3
ASKHAM
AZi3
SVkd3
Molopo
SVkd1
Kuruman
SVkd2
SVkd1
SVkd1
AZi4
30
MIDDELPUTS
AZi4
SVk12
SVk11
SVk12
AZi3
FRYLINCKSPAN
SVk12
38
SVkd1
AZi3
VAN ZYLSRUS
SVkd1
SVk16
SVkd1
SVk12
SVk13
37

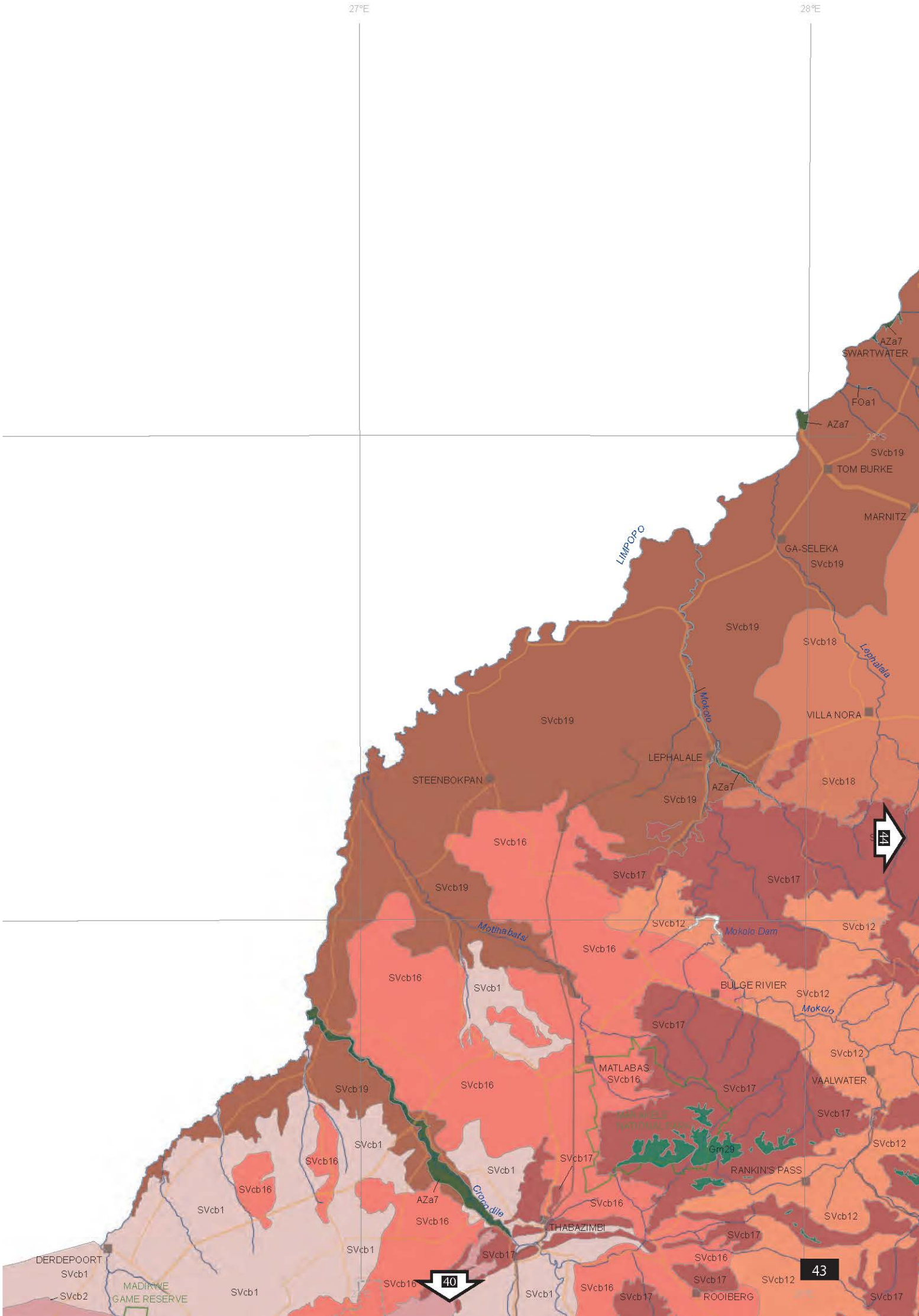

23°E
24°E
25°S
26°S
Molopo
AZi3
SVk11
BRAY
AZi4
TERRA FIRMA
SVk1
MOLOPORIVIER
VERGELEË
SENLAC
POMFRET
SVk10
VORSTERSHOOP
TOSCA
Phepane
MOROKWENG
MCCARTHY'S RUST
KAGISO
Tlapeng
Kgokgole
TLHAKGAMENG
SVk12
GANYESA
SEVERN
Moshaweng
37
FRYLINCKSPAN
LAXEY
TLAPENG
SVk2
LOUWNA
SVk9
Matlhwaring
SVk8
SVk16
SVkd1
TSINENG
Kuruman
GA-MOPEDI
Logobate
LYKSO
SVk13
SVk15
38
HOTAZEL
31
DEDEBEN
Ga-Mogara
SVkd1
SVk7

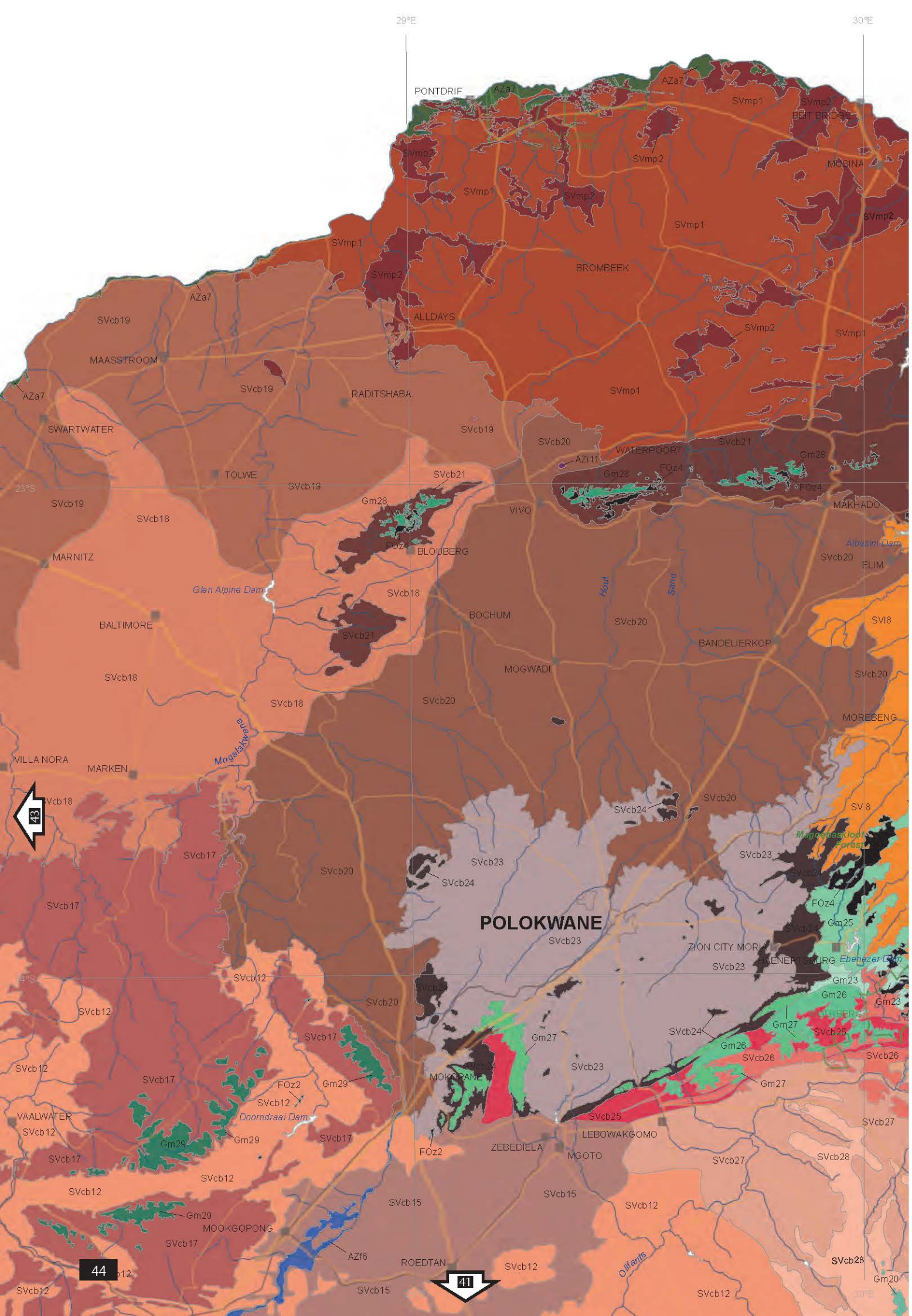

25°E
26°E
SVcb1
MADIKWE GAME RESERVE
SVcb2
AZi11
SVcb4
WITKLEIGAT
25°S
Marico
GOPANE
SVcb3
SVcb4
SVcb3
SVcb4
Gh15
LEHURUTSHE
SVcb4
SVk1
ZEERUST
SVcb3
Gh13
SVcb4
SVcb4
SVcb8
MOLOPO
AZi10
SVk1
OTTOSHOOP
SVcb4
SLURRY
MASIBI
AZi10
TSHIDILAMOLOMO
SVk1
MAFIKENG
Gh13
ROOIGROND
Gh15
LOGAGENG
Gh15
BAKERVILLE
Gh14
Gh14
Setlagole
Gh13
Dispi
ITSONENG
Gh14
Gh14
PIET PLESSIS
SVk1
MAREETSANE
Gh14
LICHTENBURG
Gh14
SVk1
Gh14
Gh10
Groot-Harts
SETLAGOLE
AZa5
Gh14
SVk1
Gh13
BIESIESVLEI
COLIGNY
AZi10
Gh14
AZa5
GERDAU
GEYSDORP
SANNIESHOF
STELLA
AZa5
Gh14
AZi4
Barberspan
Gh10
AZi10
SVk2
DELAREYVILLE
Klein-Harts
SVk2
AZa5
Leeuspruit
Gh14
Gh13
BROEDERSPUT
Gh14
OTTOSDAL
AZi4
Gh10
MIGDOL
Harts
SVk7
Losaas
VRYBURG
Gh14
AZa5
27°S
Gh10
SVk1
GLAUDINA
Gh13
SVk3
Gh10
AZi10
SVk7
WITPOORT
SCHWEIZER-RENEKE
SVk4
WOLMARANSSTAD
LEEUDORING
Harts
Gh13
SVk7
AZi10
SVk4
AZi4
SVk3
Gh14
AZi10
MAKWASSIE
25°E
26°E
Gh10
32
SVk4
AZi10
39

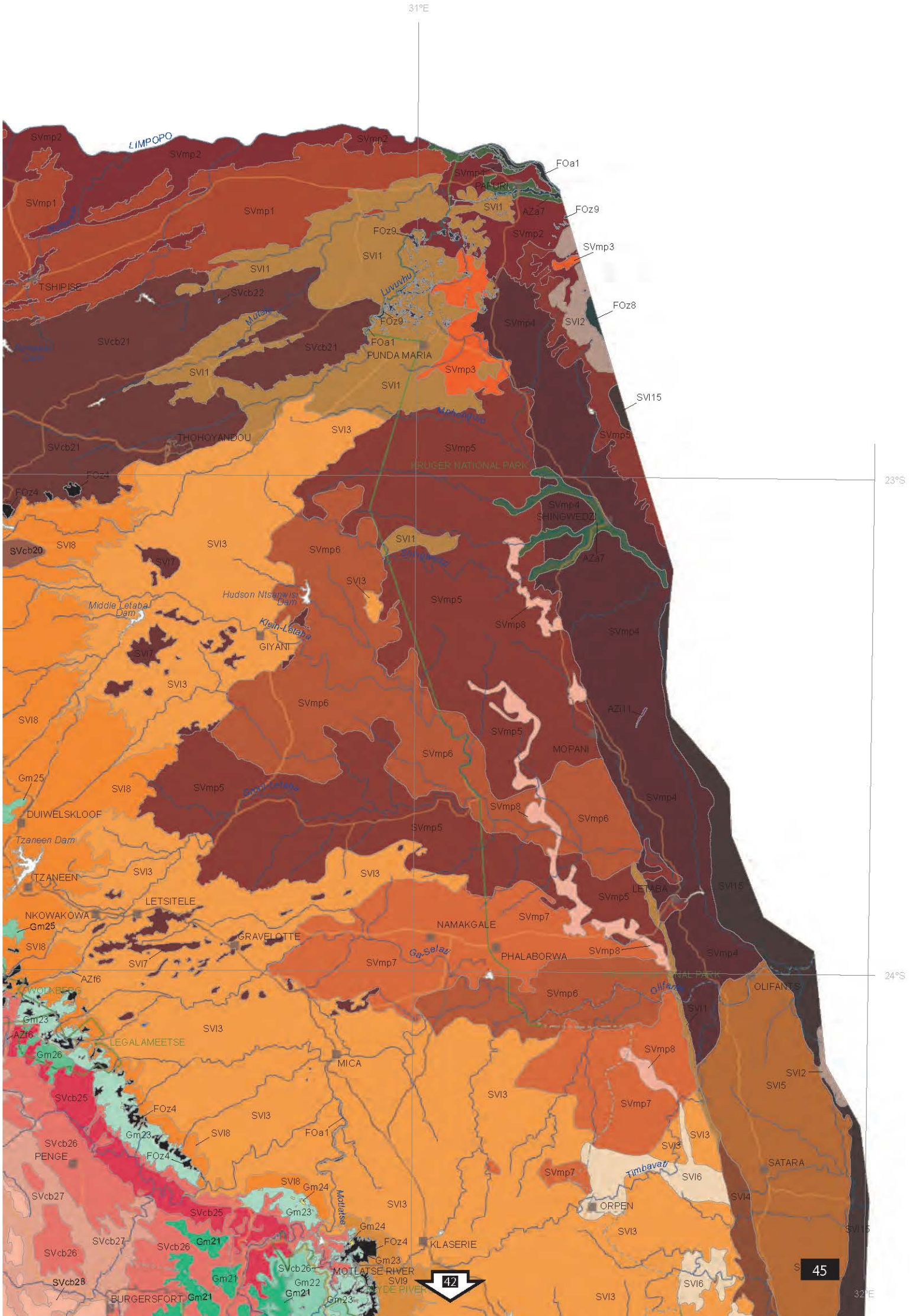

DERDEPOORT
MADIKWE GAME RESERVE
DWARSBERG
Molatedi Dam
NORTHAM
ROOIBERG
MABESKRAAL
PILANSBERG GAME RESERVE
SUN CITY
Vaalkop Dam
Klipvoor Dam
Crocodile
Groot-Marico
Elands
Rooikoppies Dam
TSITSING
PELLA
PHOKENG
GROOT-MARICO
SWARTRUGGENS
RUSTENBURG
BRITS
MABOPANE
GA-RANKUWA
BORAKALALO
PRETORIA
Hartbeespoort Dam
Hex
Koster
KOSTER
DERBY
Magalies
MAGALIESBURG
GROOTPAN
CENTURION
KRUGERSDORP
JOHANNESBURG
RANDFONTEIN
VENTERSPOS
WESTONARIA
GA-RAMODINGWANA
Klerkskraal Dam
KHUTSONG
VENTERSDORP
COLIGNY
CARLETONVILLE
Skoonspruit
EVATON
SEBOKENG
MEYERTON
VEREENIGING
Kliprivier Dam
POTCHEFSTROOM
VANDERBIJL PARK
HARTBEESFONTEIN
KLERKSDORP
Mooi
SASOLBURG
Koppiesmaalsspruit
DENEYSVILLE
PARYS
ORKNEY
VREDEPORT
ORANJEVILLE
VIERFONTEIN
VILJOENSKROON
Renoster
Koppies Dam
KOPPIES
LEEUDORINGSTAD
43
501
33
40

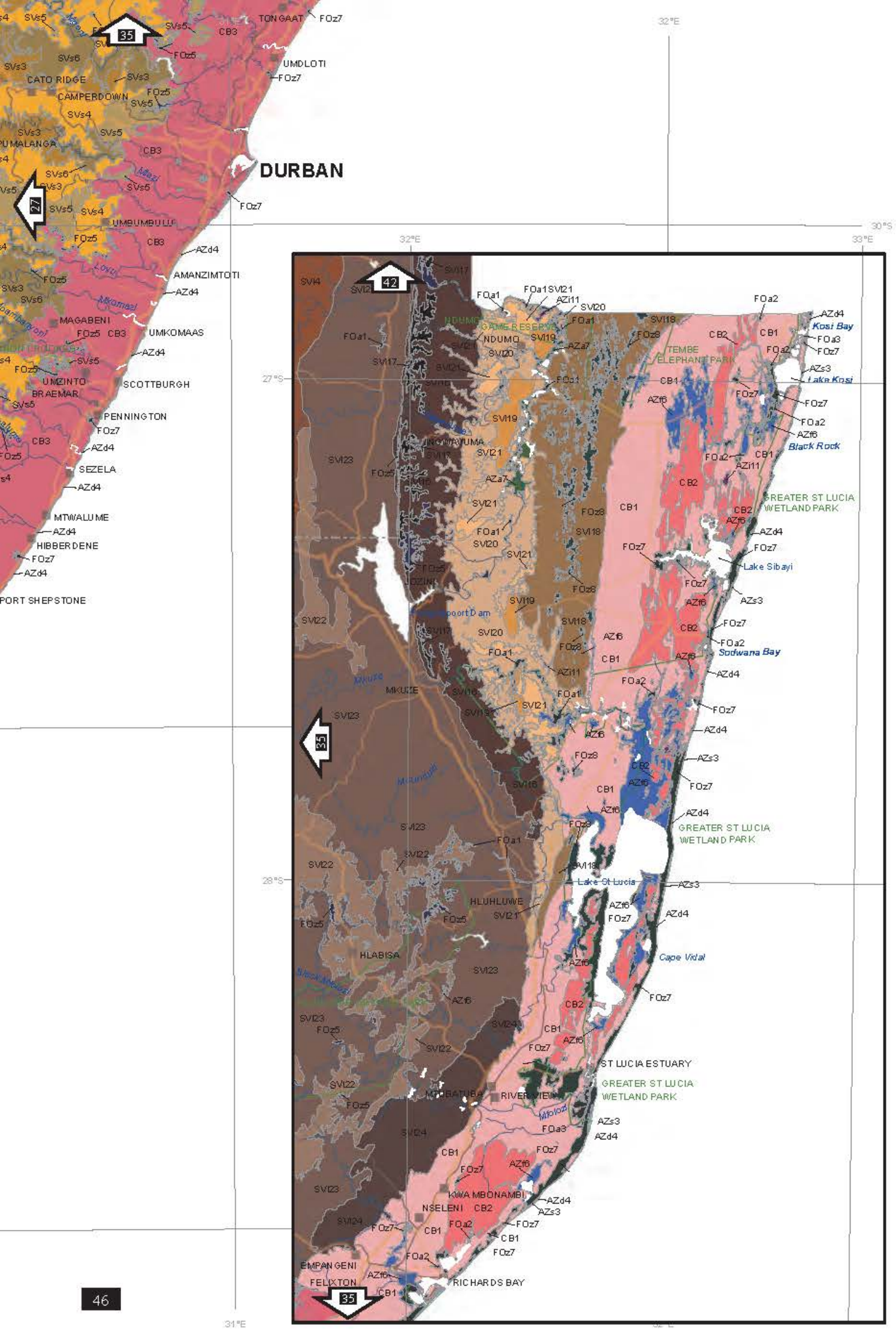

PRETORIA
WITBANK
MIDDELBURG
BELFAST
MACHADODORP
DULLSTROOM
STOFFBERG
ROOSSENEKAL
STEELPOORT
JANE FURSE
MARBLE HALL
GROBLERSDAL
DENNILTON
SIYABUSWA
MASOBE
BELA-BELA
MODIMOLLE
HAMMANSKRAAL
CULLINAN
BRONKHORSTSPRUIT
BAPSFONTEIN
KENDAL
OGIES
DELMAS
SPRINGS
NIGEL
HEIDELBERG
BALFOUR
GREYLINGSTAD
VILLIERS
FRANKFORT
DEVON
LEANDRA
EVANDER
KINROSS
KRIEL
TRICHARDT
SECUNDA
BETHAL
DAVEL
ERMELO
CHRISSIESMEER
BREYTEN
CAROLINA
HENDRINA
ARNOT
MORGENZON
SHEEPMOOR
AMERSFOORT
PERDEKOP
STANDERTON
Rust de Winter Dam
Roodeplaat Dam
Bronkhorstspruit Dam
Witbank Dam
Nooitgedacht Dam
Chrissiesmeer
Grootdraai Dam
Vaal Dam
Moses
Elands
Olifants
Steelpoort
Wilge
Vaal
Klip
Sandspruit
Rietspruit
Waterval
Boesmanspruit
Seroins
Akkerman
44
42
34
41

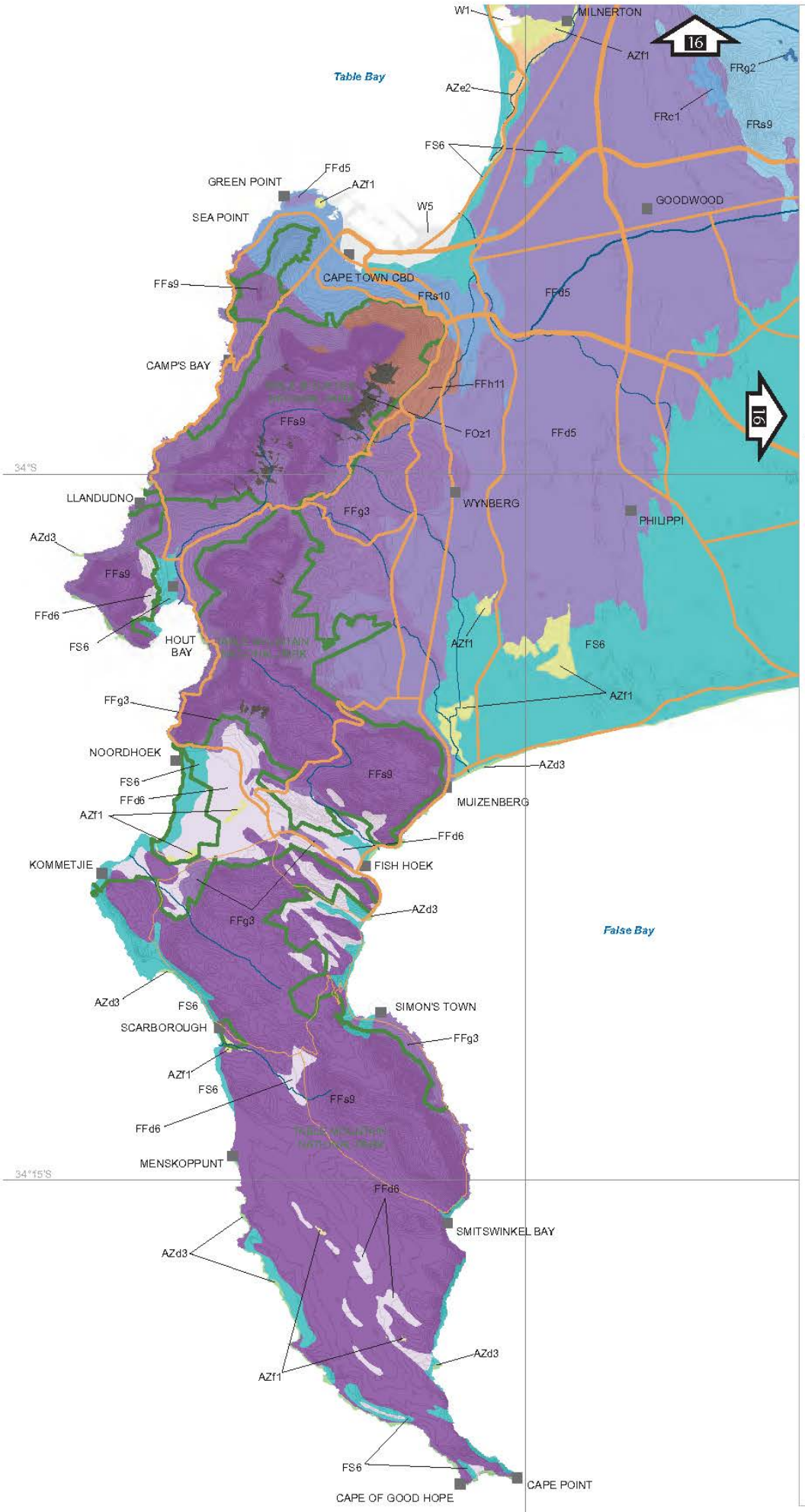

NELSPRUIT
KLASERIE
MOTLATSE RIVER
BLYDE RIVER CANYON
BURGERSFORT
OHRIGSTAD
PILGRIM'S REST
GRASKOP
BUSHBUCKRIDGE
SABIE
LYDENBURG
HAZYVIEW
SKUKUZA
KRUGER NATIONAL PARK
PRETORIUSKOP
LOWER-SABIE
CROCODILE BRIDGE
WHITE RIVER
HECTORSPRUIT
MALELANE
KOMATIPOORT
KAAPSEHOOP
WATERVAL-BOVEN
MACHADODORP
BARBERTON
BADPLAAS
PIGG'S PEAK
SIBAYENI
LOCHIEL
WARBURTON
MBABANE
LOTHAIR
MANZINI
BHUNYA
AMSTERDAM
SHEEPMOOR
PIET RETIEF
HLATHIKHULU
MAHAMBA
BIG BEND
SITEKI
Badfontein Dam
Vygeboom Dam
Westoe Dam
Jericho Dam
Morgenstond Dam
Heyshope Dam
Mnjoli Dam
Sand River Dam
Sand
Sabie
Crocodile
Nkomati
Mpuluzi
Usutu
Mlumati
Nwaswitsontso
Black Mbuluzi
White Mbuluzi
45
41
42
35
46
32°E
25°S


27°E
28°E
AZa7
SWARTWATER
FOa1
AZa7
SVcb19
TOM BURKE
MARNITZ
LIMPOPO
GA-SELEKA
SVcb19
SVcb19
SVcb18
Lephalala
Mokolo
VILLA NORA
SVcb19
LEPHALALE
STEENBOKPAN
AZa7
SVcb18
SVcb19
44
SVcb16
SVcb17
SVcb17
SVcb19
Mokolo Dam
SVcb12
SVcb12
Matlhabatsi
SVcb16
SVcb16
SVcb1
BULGE RIVIER
SVcb12
Mokolo
SVcb17
SVcb12
MATLABAS
SVcb16
VAALWATER
SVcb19
SVcb16
SVcb17
SVcb17
SVcb1
Gm29
SVcb12
SVcb16
SVcb17
SVcb1
RANKIN'S PASS
SVcb16
AZa7
Crocodile
SVcb1
SVcb16
SVcb16
SVcb12
THABAZIMBI
SVcb17
SVcb1
SVcb16
DERDEPOORT
SVcb1
SVcb17
SVcb16
43
SVcb2
MADIKWE
GAME RESERVE
SVcb1
SVcb16
40
SVcb1
SVcb16
SVcb17
SVcb17
SVcb12
ROOIBERG
SVcb17


29°E
30°E
PONTDRIF
AZa7
SVmp1
SVmp2
BEIT BRIDGE
MOSINA
BROMBEEK
ALLDAYS
MAASSTROOM
SVcb19
RADITSHABA
SWARTWATER
TOLWE
WATERPOORT
AZi11
Gm28
FOz4
MARHADO
VIVO
SVcb21
SVcb18
MARNITZ
BLOUBERG
Albasini Dam
ELIM
SVcb20
Glen Alpine Dam
Hout
Sand
BALTIMORE
BOCHUM
BANDELIERKOP
SVI8
MOGWADI
MOREBENG
Mogalakwena
VILLA NORA
MARKEN
43
SVcb24
SV 8
Magoebaskloof Forest
SVcb23
POLOKWANE
ZION CITY MORIA
EENERTSBURG
Ebenezer Dam
Gm23
Gm26
Gm27
SVcb25
SVcb26
MOKOPANE
LEBOWAKGOMO
SVcb27
VAALWATER
Doorndraai Dam
Gm29
FOz2
SVcb12
SVcb17
ZEBEDIELA
MGOTO
SVcb28
MOOKGOPONG
AZf6
ROEDTAN
41
Olifants
Gm20
44


31°E
23°S
24°S
32°E
LIMPOPO
Mutale
Luvuvhu
Mutshindudi Dam
Mthongwe
Klein-Letaba
Middle Letaba Dam
Hudson Ntsanwisi Dam
Tzaneen Dam
Ga-selati
Olifants
Timbavati
Motlatse
TSHIPISE
THOHOYANDOU
PUNDA MARIA
KRUGER NATIONAL PARK
SHINGWEDZI
GIYANI
MOPANI
LETABA
OLIFANTS
TZANEEN
DUIWELSKLOOF
LETSITELE
NKOWAKOWA
GRAVELOTTE
NAMAKGALE
PHALABORWA
MICA
LEGALAMEETSE
PENGE
ORPEN
SATARA
KLASERIE
MOTLATSE RIVER
BURGERSFORT
SVmp1
SVmp2
SVmp3
SVmp4
SVmp5
SVmp6
SVmp7
SVmp8
SVI1
SVI2
SVI3
SVI4
SVI5
SVI6
SVI7
SVI8
SVI9
SVI15
SVcb20
SVcb21
SVcb22
SVcb25
SVcb26
SVcb27
SVcb28
FOa1
FOz4
FOz8
FOz9
AZa7
AZf6
AZI11
Gm21
Gm22
Gm23
Gm24
Gm25
Gm26
42
45


DURBAN
TONGAAT
UMDLOTI
CATO RIDGE
CAMPERDOWN
UMALANGA
UMBUMBULU
AMANZIMTOTI
MAGABENI
UMKOMAAS
UMZINTO
SCOTTBURGH
BRAEMAR
PENNINGTON
SEZELA
MTWALUME
HIBBERDENE
PORT SHEPSTONE
NDUMO GAME RESERVE
TEMBE ELEMENT PARK
Kosi Bay
Lake Kosi
Black Rock
GREATER ST LUCIA WETLAND PARK
Lake Sibayi
Sodwana Bay
Lake St Lucia
Cape Vidal
ST LUCIA ESTUARY
GREATER ST LUCIA WETLAND PARK
KWA MBONAMBI
NSELENI
EMPANGENI
FELIXTON
RICHARDS BAY
HLABISA
HLUHLUWE
MKUZE
32°E
33°E
30°S
27°S
28°S
31°E



Vegetation Map of the Cape Peninsula

(Western Cape, South Africa)

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2014

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0 1 2 4 6 8 Km

Projection: Albers
Central Meridian: 18.5
Standard Parallel 1: -20
Standard Parallel 2: -30
Geographic Coordinate System: WGS 1984
Sources of GIS layers: Vegmap 2012
Sources of rivers: 1:500 000 DWAF rivers coverage

- Town
- National road
- Main road
- Secondary road
- Protected area boundary
- River
- 20 m contour

- FFs9: Peninsula Sandstone Fynbos
- FFd5: Cape Flats Sand Fynbos
- FFd6: Hangklip Sand Fynbos
- FFh11: Peninsula Shale Fynbos
- FFg3: Peninsula Granite Fynbos
- FRs9: Swartland Shale Renosterveld
- FRs10: Peninsula Shale Renosterveld
- FRg2: Swartland Granite Renosterveld
- FRc1: Swartland Silcrete Renosterveld
- FS6: Cape Flats Dune Strandveld
- FOz1: Southern Afrotemperate Forest
- AZe2: Cape Estuarine Salt Marshes
- AZd3: Cape Seashore Vegetation
- AZf1: Cape Lowland Freshwater Wetlands
- W1: Freshwater Lakes
- W5: Reclaimed Land