

BIO DIVERSITY NEXT

Better data – better science – better policies

Building a global infrastructure
for biodiversity data. Together.
22 – 25 October
Leiden – The Netherlands

Georeferencing and data quality

Fhatani Ranwashe

Biodiversity_Next is commissioned by



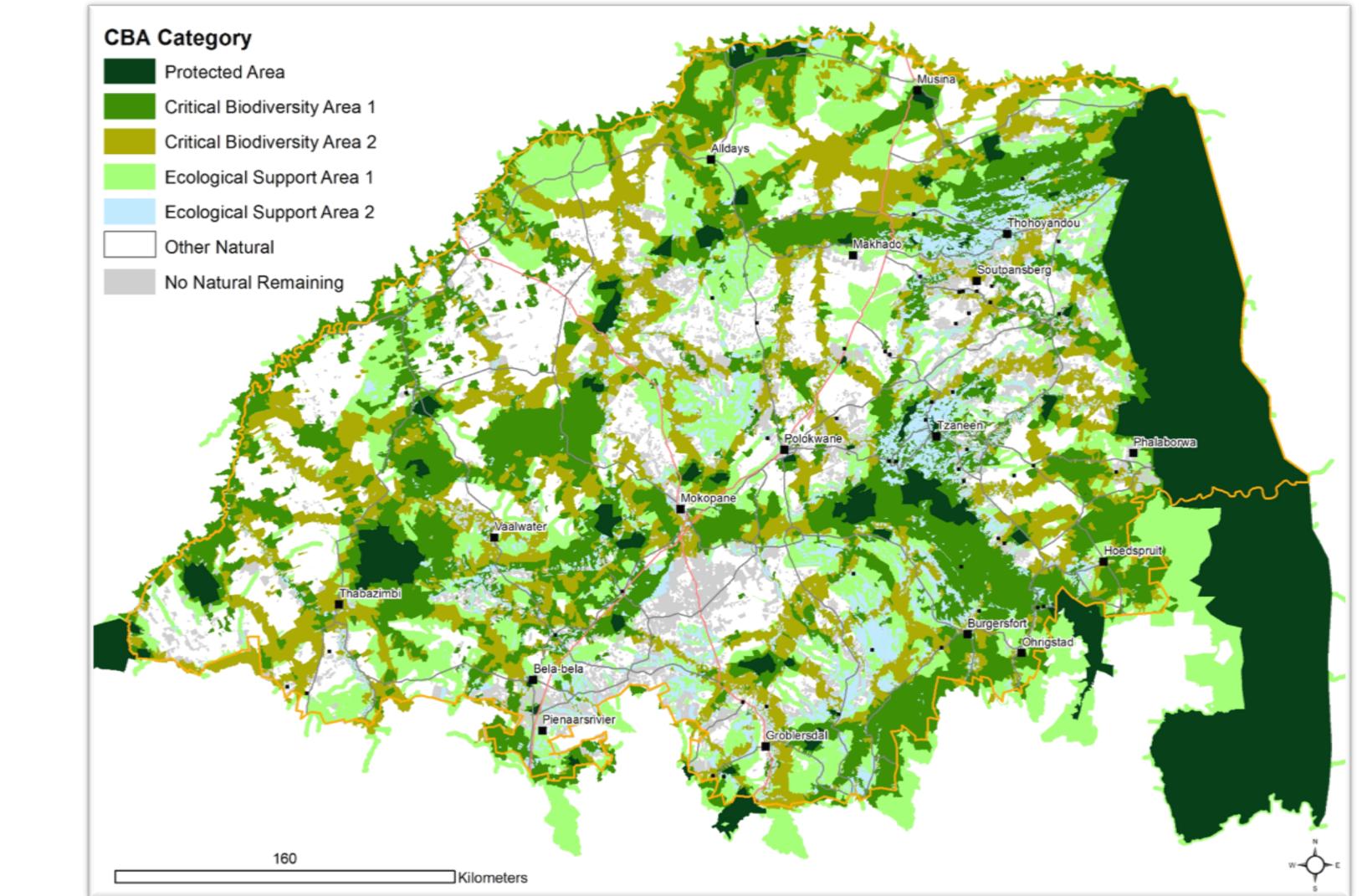
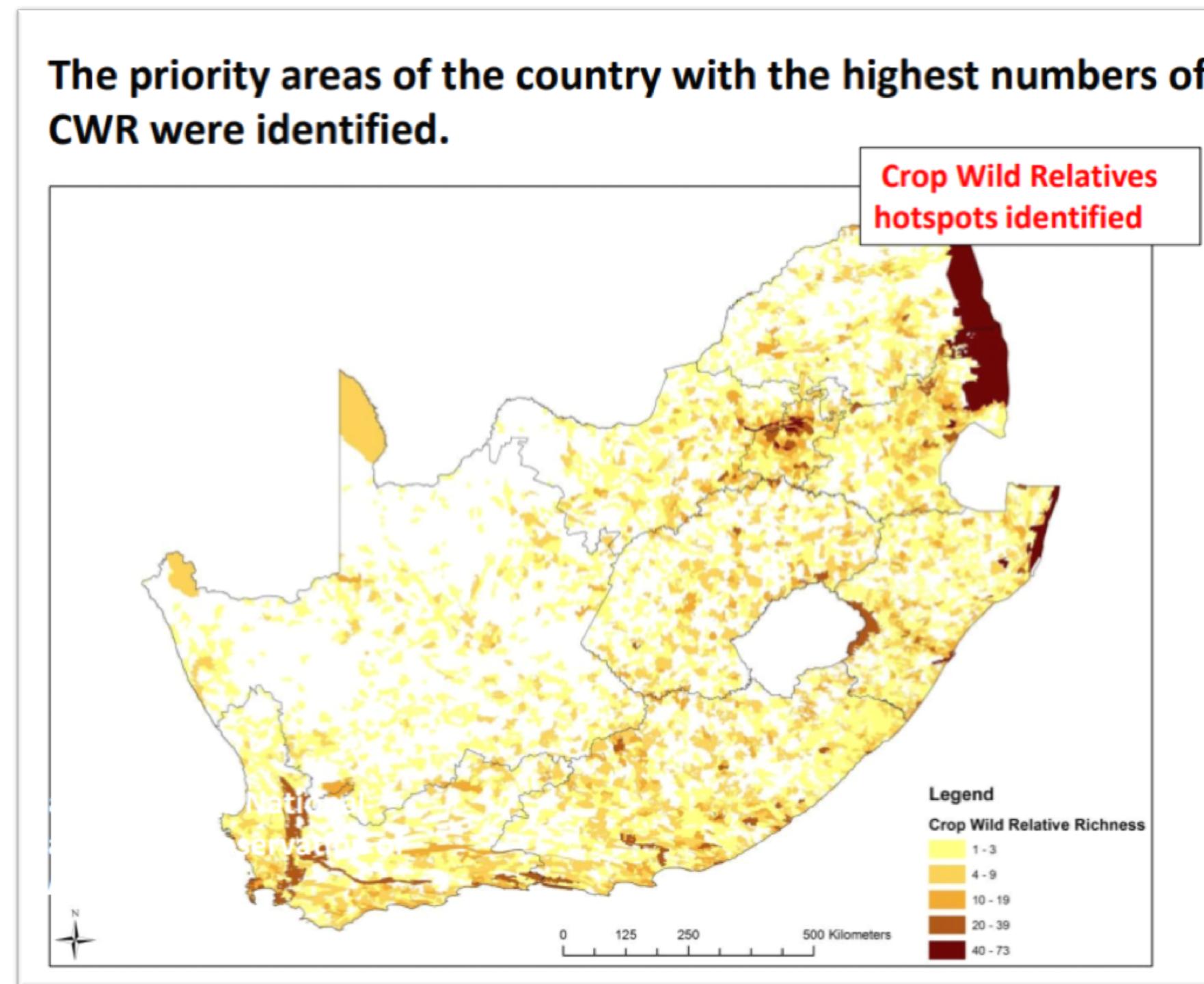
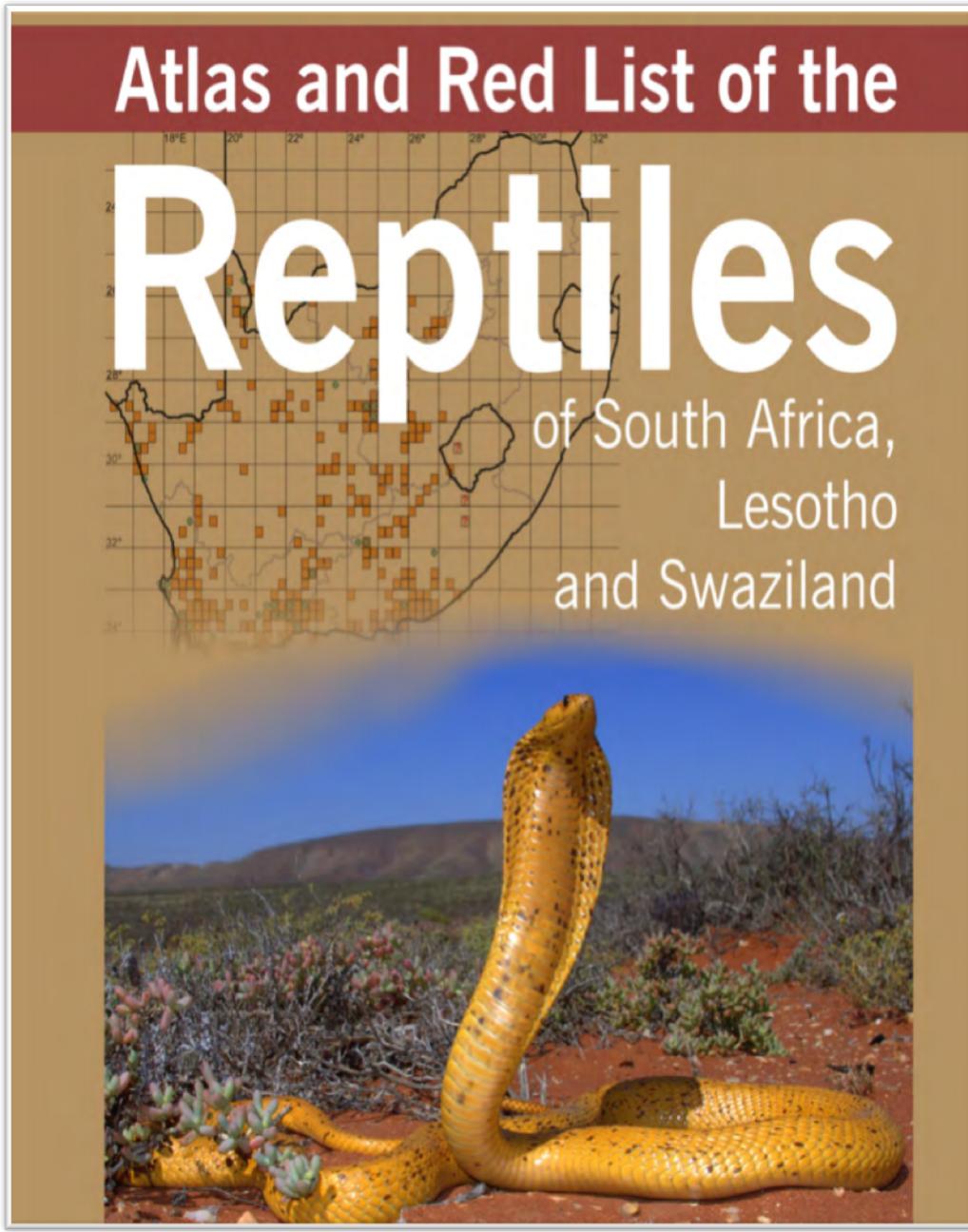
Biodiversity_Next is hosted by



A joint conference by



South African National Biodiversity Institute

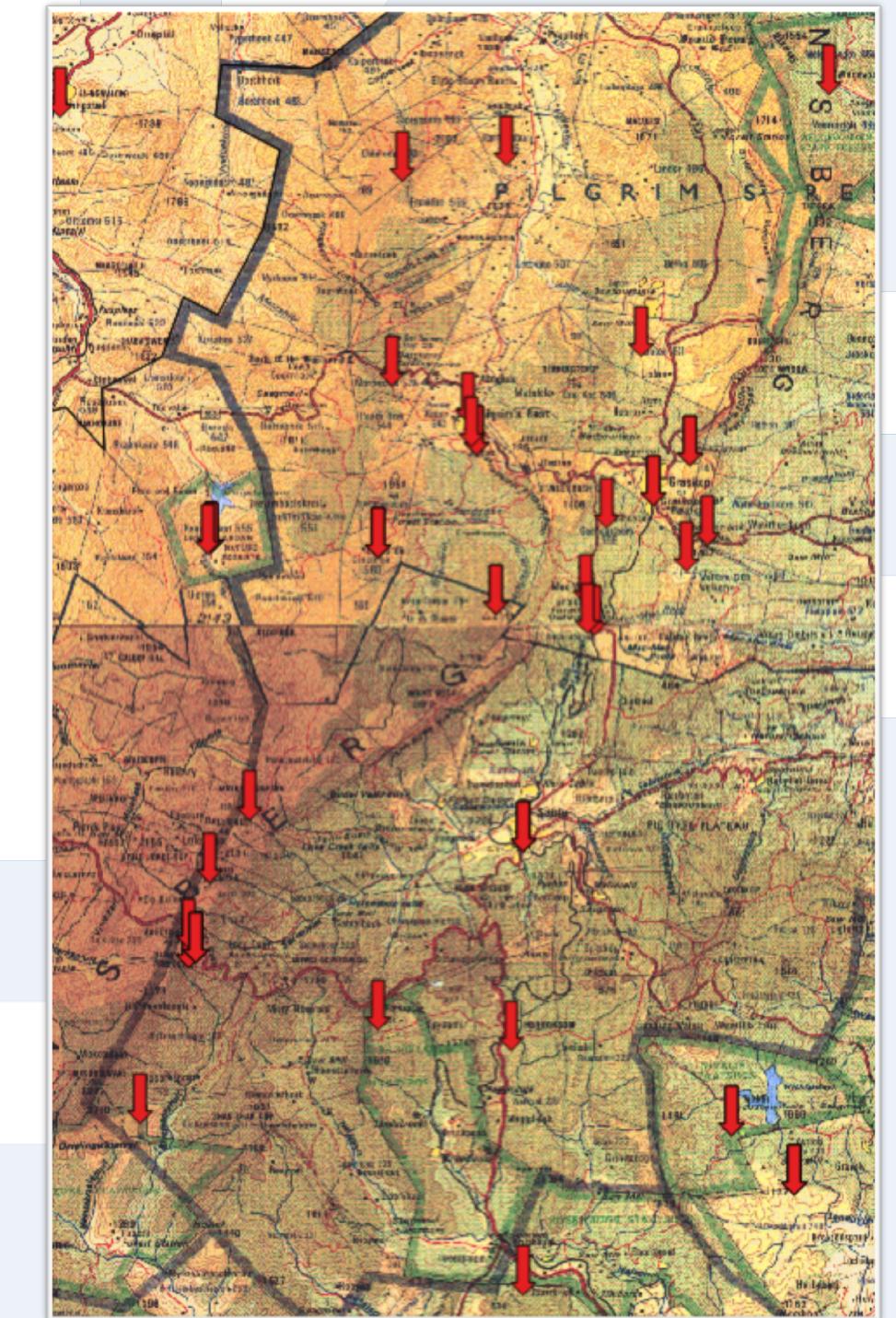


Data quality

- “fitness for use”?
- “While quantity may be a requirement for scaling up analyses, quality assurance is equally important” Javier Otegui and Robert Guralnick <https://doi.org/10.1093/bioinformatics/btw057>

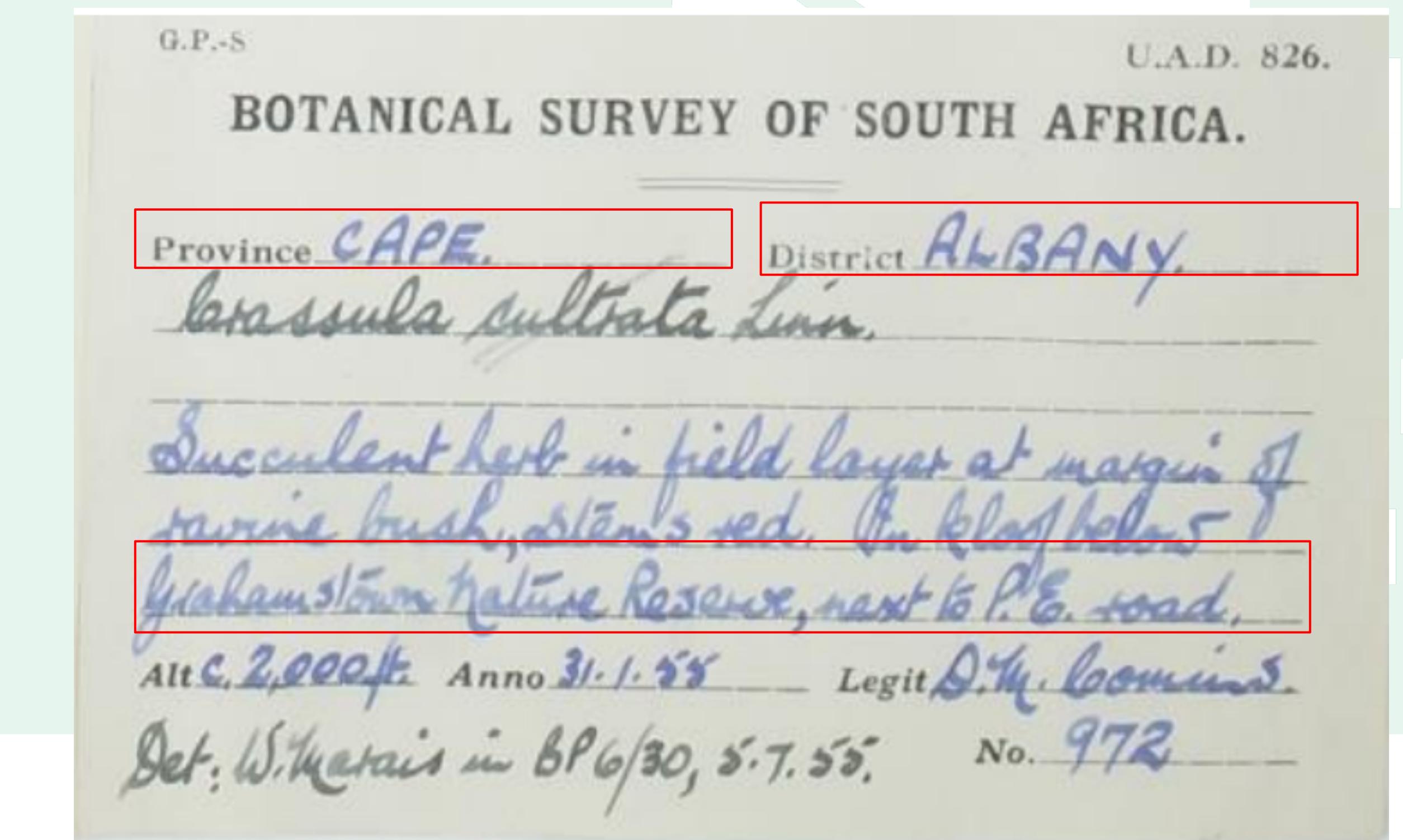
Georeferencing

- The location of where a specimen is found is an important of biodiversity data.
- Process of transforming textual locality information into spatial representation.



Legacy georeferencing

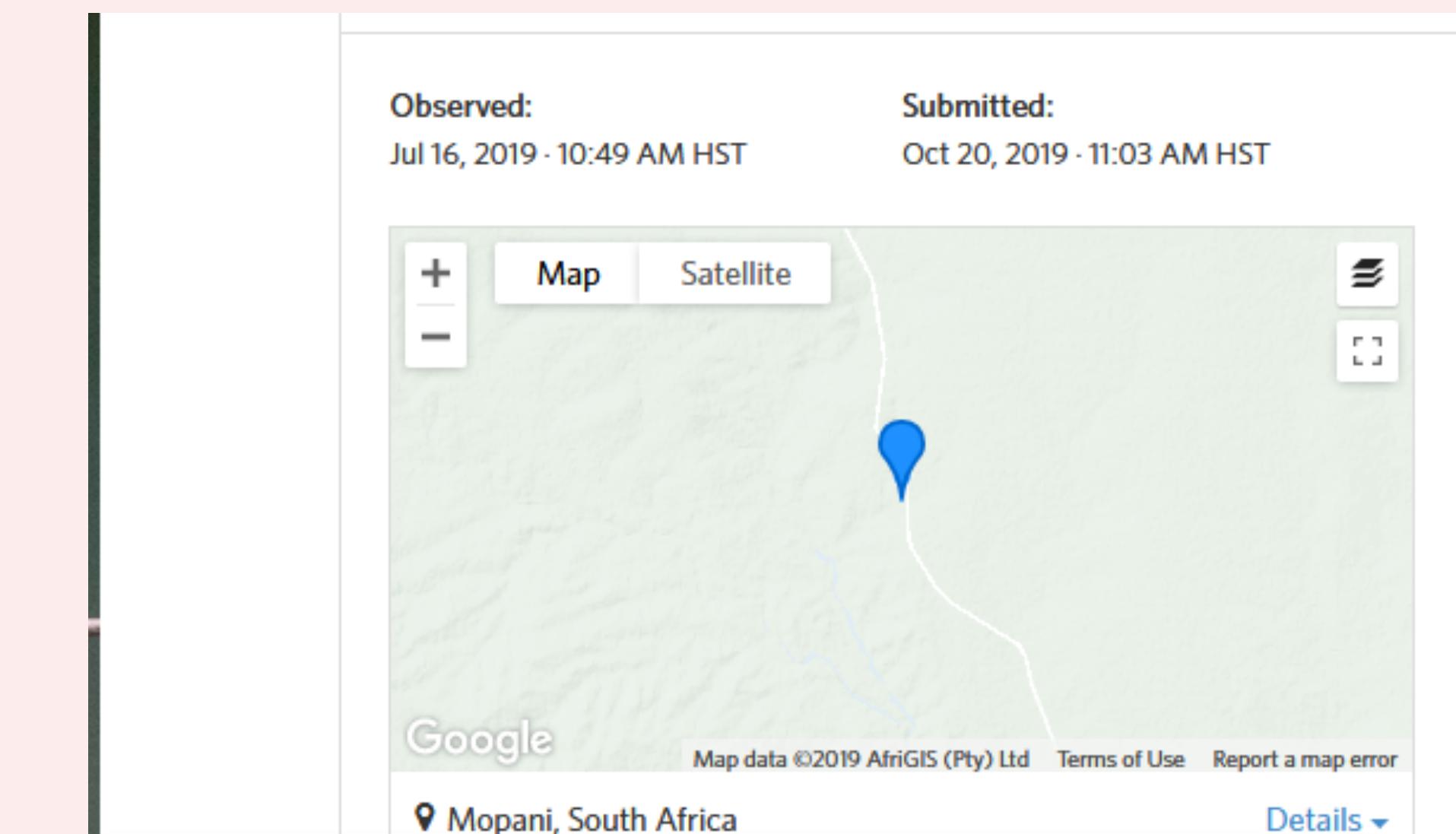
- Province: Cape
- District: Albany
- Locality: Grahamstown Nature Reserve, next to P.E. road
- Latitude: ??????
- Longitude: ?????



Present geoferencing

- Mobile devices
- Handheld GPS
- Gazetteers (Geographical location database)
- Recording accuracy and error information

Observed: Jul 16, 2019 · 10:49 AM HST Submitted: Oct 20, 2019 · 11:03 AM HST



Lat: -22.904821 Lon: 31.251388 Accuracy: 13m Geoprivacy: Open

Encompassing Places

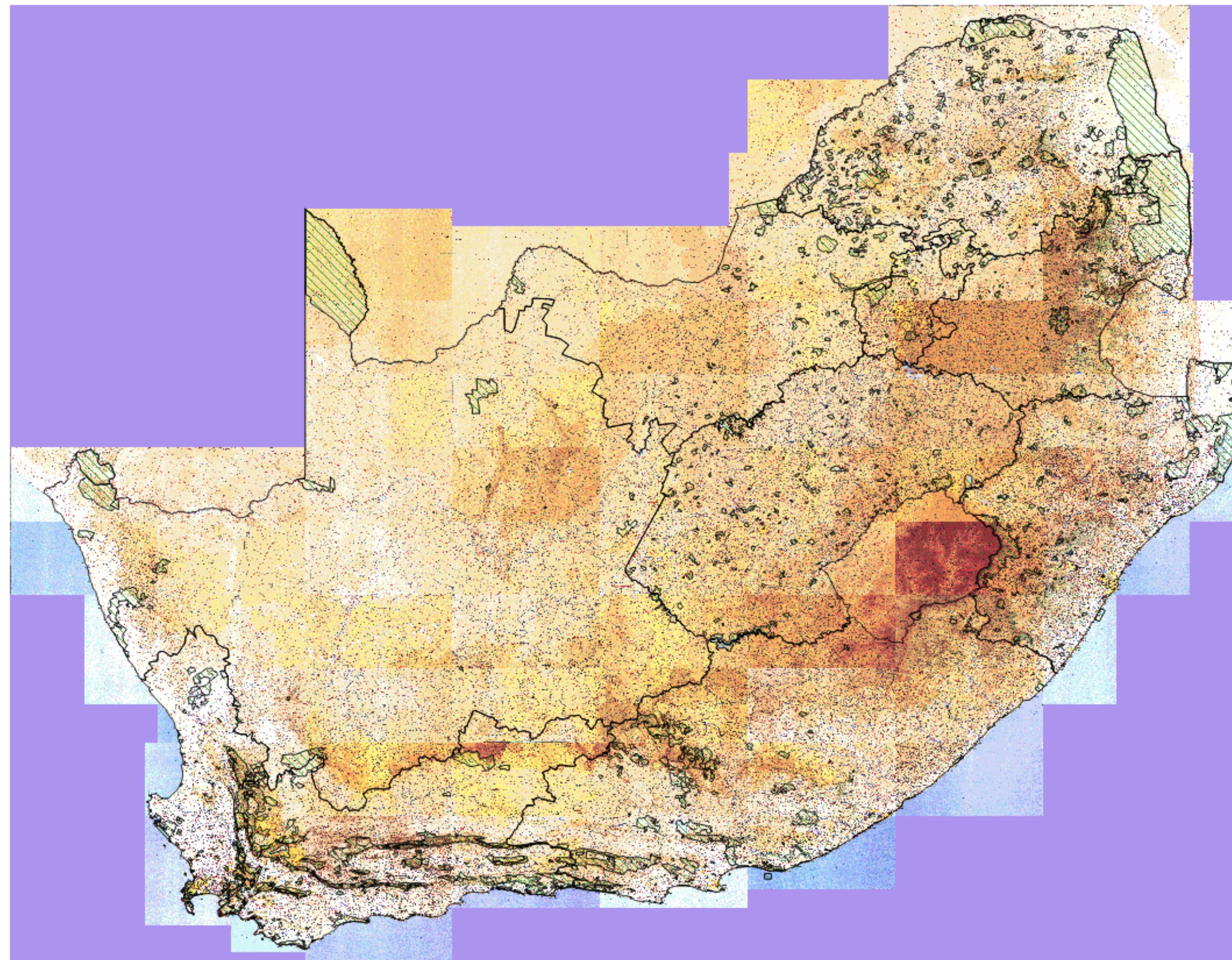
Standard:	Community Curated:
Africa (Continent)	Phalaborwa (Region)
South Africa (Country)	Soutpansberg, NP, ZA (County)
Limpopo, ZA (Province)	Kruger National Park, ZA (Open space)
Vhembe, NP, ZA (County)	Southern Africa (Region)
	Afrotropic Ecozone (Zone)
	Africa & surrounding islands (Continent)

[View on Google](#) · [OpenStreetMap](#)



Tools for geoferencing

- GIS Softwares (Quantum GIS, ArcGIS)
- Gazetters
- Geolocate (<https://www.geo-locate.org/>)
- Google Earth/Maps
- Georeferencing (<http://georeferencing.org/>)



Layers Panel

- provinces
- Grid50_RSA
- SA_PAv10d_SpeciesWorkshop_WGS84
- vegm2009
- 1to50k
- 1to250k
- Acocks
- South Africa CD:NGI Aerial

Layers Panel Search QMS Gazetteer Search

Where would you like to go today?

Search for: grahamstown Go!

Gazetteer: SANBI Gazetteer Clear

14kms North West of Grahamstown near Hyde's Hill., Eastern Cape (BioGaps: Aizoaceae - SANBI, Geolobus: Aizoaceae - SANBI, G) 15 KM FROM GRAHAMSTOWN ON CRADOCK ROAD. NEAR ROADSIDE, Eastern Cape 19m. N.N.E. of Grahamstown (Acocks Site) 26 GRAHAMSTOWN (Beacon, Eastern Cape) 274 DRC GRAHAMSTOWN (Beacon, Eastern Cape) 28 m. S.W. of Grahamstown (Acocks Site) 5m. N.W. Grahamstown (Acocks Site) 6 m N.W. of Grahamstown (Acocks Site) 6 m. N.W. Grahamstown (Acocks Site) 9 km from Alexandria on road to Grahamstown, near farm Geelhoutboom., Eastern ALBANY DIST.; 22 MI. FROM GRAHAMSTOWN ON CRADOCK RD. TOWARDS CARLISLE ALBANY DIST.; 23 MI. FROM GRAHAMSTOWN CRADOCK RD. TOWARDS CARLISLE ALBANY DIST.; ALICEDALE; NR. ALICEDALE ON GRAHAMSTOWN RD., Cape Province (BioGaps: Aizoaceae - SANBI, Geolobus: Aizoaceae - SANBI, G) ALBANY DIST.; GRAHAMSTOWN, Eastern Cape (BioGaps: Aizoaceae - SANBI, Geolobus: Aizoaceae - SANBI, G) ALBANY DIST.; GRAHAMSTOWN; 10 MI. FROM GRAHAMSTOWN ON PIGGOTT BRIDGE ALBANY DIST.; GRAHAMSTOWN; 7 MI. FROM GRAHAMSTOWN ON GLETWYN FARM ALBANY DIST.; GRAHAMSTOWN; BOTHAS HILL 10 MI. FROM GRAHAMSTOWN, Eastern Cape ALBANY DIST.; GRAHAMSTOWN; BOTHAS HILL N10 MI. FROM GRAHAMSTOWN, Eastern Cape ALBANY DIST.; GRAHAMSTOWN; ON BOTHAS HILL 10 MI. FROM GRAHAMSTOWN, Eastern Cape ALBANY DIST.; GRAHAMSTOWN; ON SLOPE OF GRAHAMSTOWN COMMONAGE AT C ALBANY DIST.; GRAHAMSTOWN; WEST HILL, Eastern Cape (BioGaps: Aizoaceae - SANBI, Geolobus: Aizoaceae - SANBI, G) ALBANY DIST.; ON KINGWILLIAMSTOWN RD. 15 MI. FROM GRAHAMSTOWN, Cape Province (BioGaps: Aizoaceae - SANBI, Geolobus: Aizoaceae - SANBI, G) ALBANY DIST.; PLUTOS VALE; 13 MI. FROM GRAHAMSTOWN, Cape Province (BioGaps: Aizoaceae - SANBI, Geolobus: Aizoaceae - SANBI, G) ALBANY DISTRICT; 15-16 MI. FROM GRAHAMSTOWN ON PEDDIE ROAD., Cape Province (BioGaps: Aizoaceae - SANBI, Geolobus: Aizoaceae - SANBI, G) ALBANY DISTRICT; GRAHAMSTOWN, Eastern Cape (BioGaps: Aizoaceae - SANBI, Geolobus: Aizoaceae - SANBI, G) ALBANY DIV.; 15 MI. FROM GRAHAMSTOWN ON KINGWILLIAMSTOWN RD., Eastern Cape ALBANY DIV.; 23.2 MI FROM GRAHAMSTOWN ON PORT ELIZABETH RD, Cape Province (BioGaps: Aizoaceae - SANBI, Geolobus: Aizoaceae - SANBI, G) ALBANY DIV.; BOTHAS HILL; 11 MI FROM GRAHAMSTOWN, Cape Province (BioGaps: Aizoaceae - SANBI, Geolobus: Aizoaceae - SANBI, G) ALBANY DIV.; BOTHAS HILL; 11 MI. FROM GRAHAMSTOWN, Cape Province (BioGaps: Aizoaceae - SANBI, Geolobus: Aizoaceae - SANBI, G) ALBANY DIV.; BOTHAS HILL; 8.5-9 MI. FROM GRAHAMSTOWN, Eastern Cape (BioGaps: Aizoaceae - SANBI, Geolobus: Aizoaceae - SANBI, G) ALBANY DIV.; COMMITTEES FLATS 20 MI. FROM GRAHAMSTOWN, Eastern Cape (BioGaps: Aizoaceae - SANBI, Geolobus: Aizoaceae - SANBI, G) ALBANY DIV.; COMMITTEES; NEAR COMMITTEES 20MI. FROM GRAHAMSTOWN, Eastern Cape (BioGaps: Aizoaceae - SANBI, Geolobus: Aizoaceae - SANBI, G) ALBANY DIV.; GRAHAMSTOWN; ABOUT 2 MI FROM GRAHAMSTOWN ON RD TO PEDDIE ROAD., Cape Province (BioGaps: Aizoaceae - SANBI, Geolobus: Aizoaceae - SANBI, G) ALBANY DIV.; GRAHAMSTOWN; BEYOND GRAHAMSTOWN BRICKFIELDS, Eastern Cape (BioGaps: Aizoaceae - SANBI, Geolobus: Aizoaceae - SANBI, G) ALBANY DIV.; GRAHAMSTOWN; BOTHAS HILL 10 MI. FROM GRAHAMSTOWN, Eastern Cape (BioGaps: Aizoaceae - SANBI, Geolobus: Aizoaceae - SANBI, G) ALBANY DIV.; GRAHAMSTOWN; CLEM BOYD FARM, Eastern Cape (BioGaps: Aizoaceae - SANBI, Geolobus: Aizoaceae - SANBI, G)

Lessons learned

- Best practices guidelines
- Adaptation
- Maintenance of legacy data
- Databasing



Thank You