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An MONTHLY outlook of Water in South Africa

A National, Monthly Surface Water Monitoring Web Service

Jens Hiestermann, GeoTerraImage

GEOTERRA IMAGE

https://www.water-southafrica.co.za

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A MONTHLY outlook of Water in South Africa!

A **monthly, national water monitoring service**, covering the whole of South Africa (and beyond).

GEOTERRA IMAGE

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A MONTHLY outlook of Water in South Africa!

A monthly, national water monitoring service, covering the whole of South Africa (and beyond).

Based on **fully automated**, cloud-based remote sensing technologies.

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A MONTHLY outlook of Water in South Africa!

Benefits:

- **accurate, reliable, repeatable** data service
- **remote monitoring** (no fieldwork costs)

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Uses:

- water use **compliance monitoring** & licensing
- **water security** assessments
- water resource **management**
- ecosystem health **monitoring**

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Product Summary:

- **Technical spin-off from automated land-cover mapping activities**

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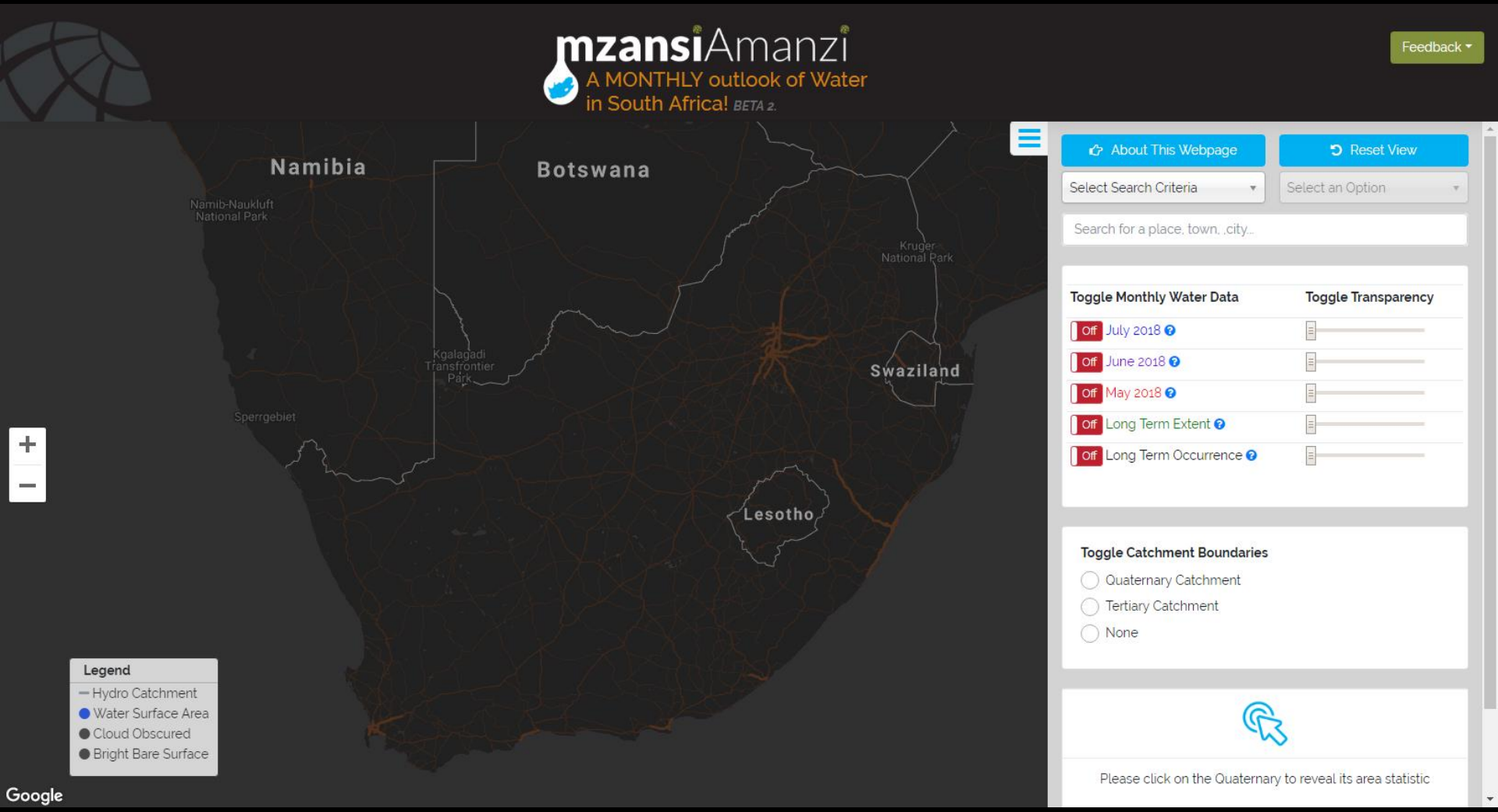
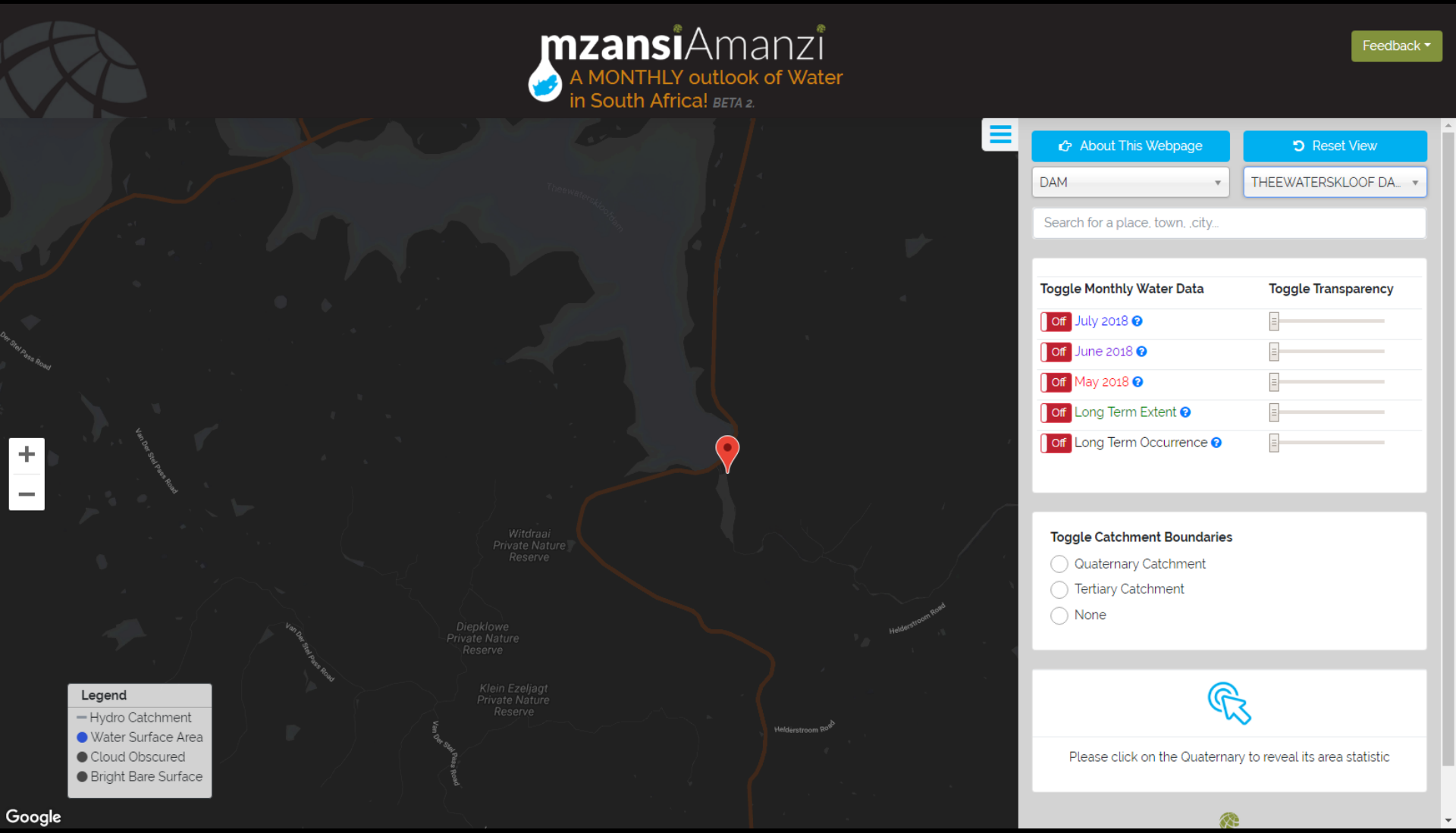
- **Public access website, future subscription data downloads**

A quick look at the current web application…

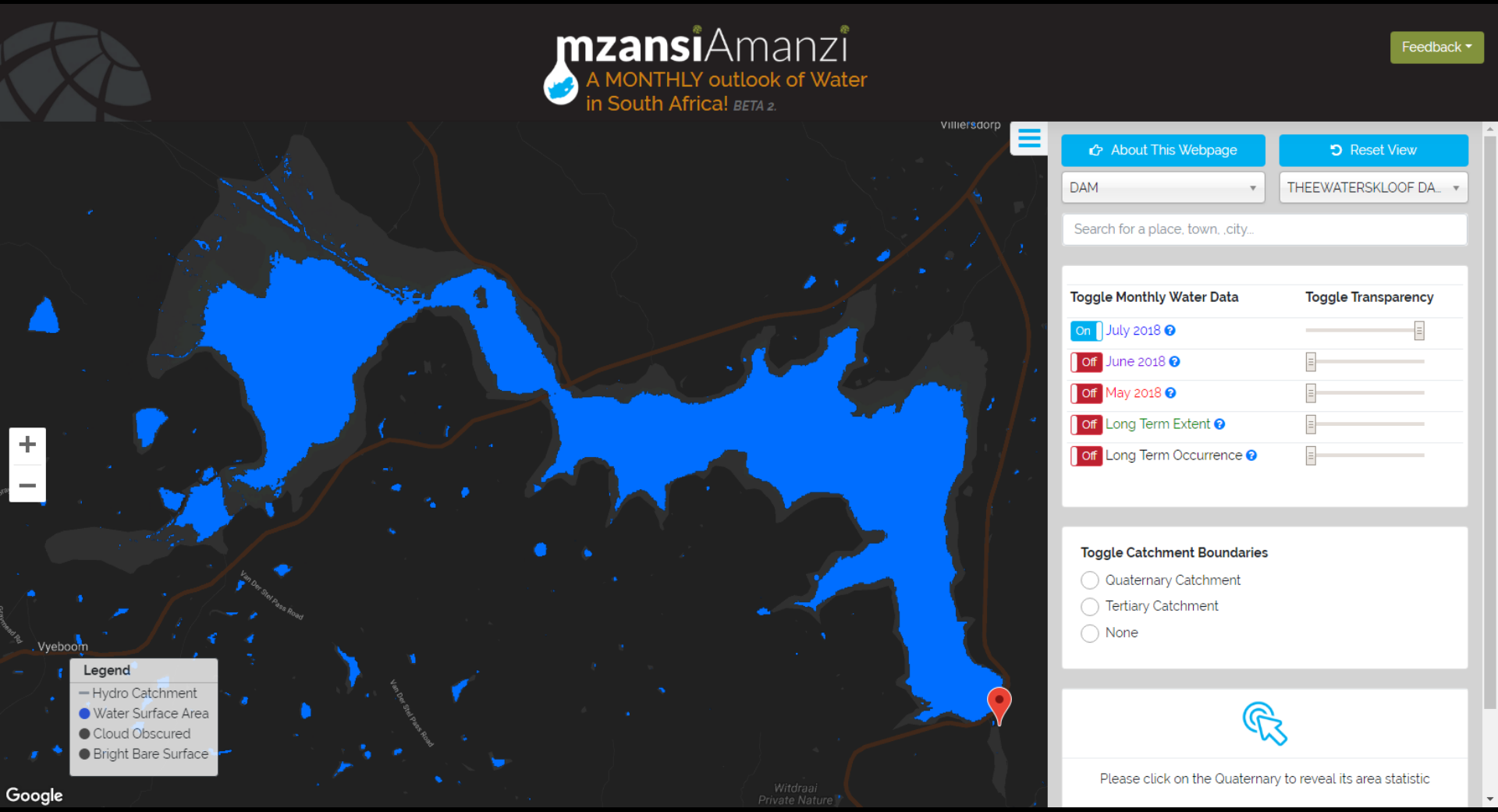
Landing Page



Quick search tool for dam name or quaternary ID

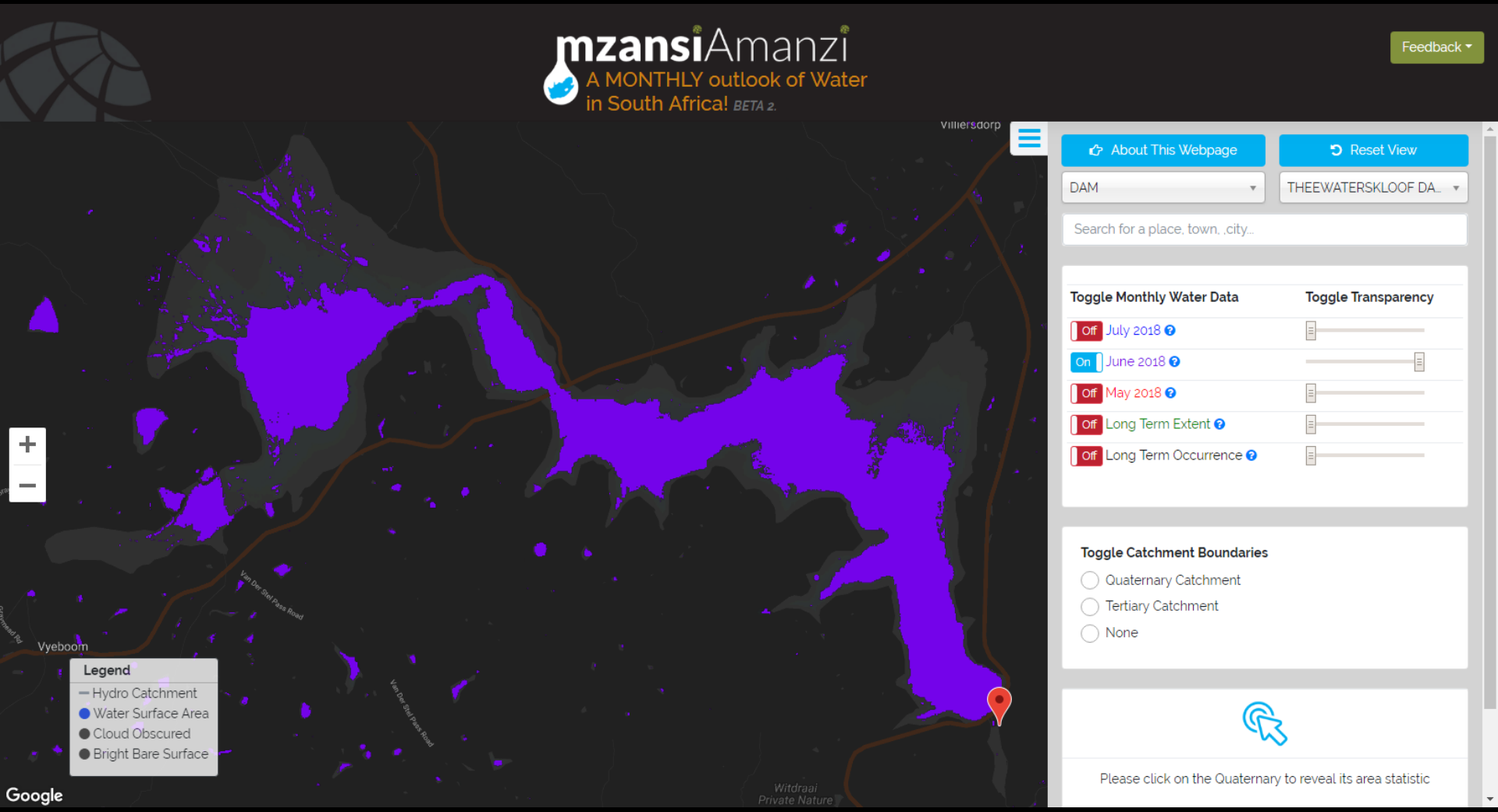


Theewaterskloof Dam: CURRENT month water



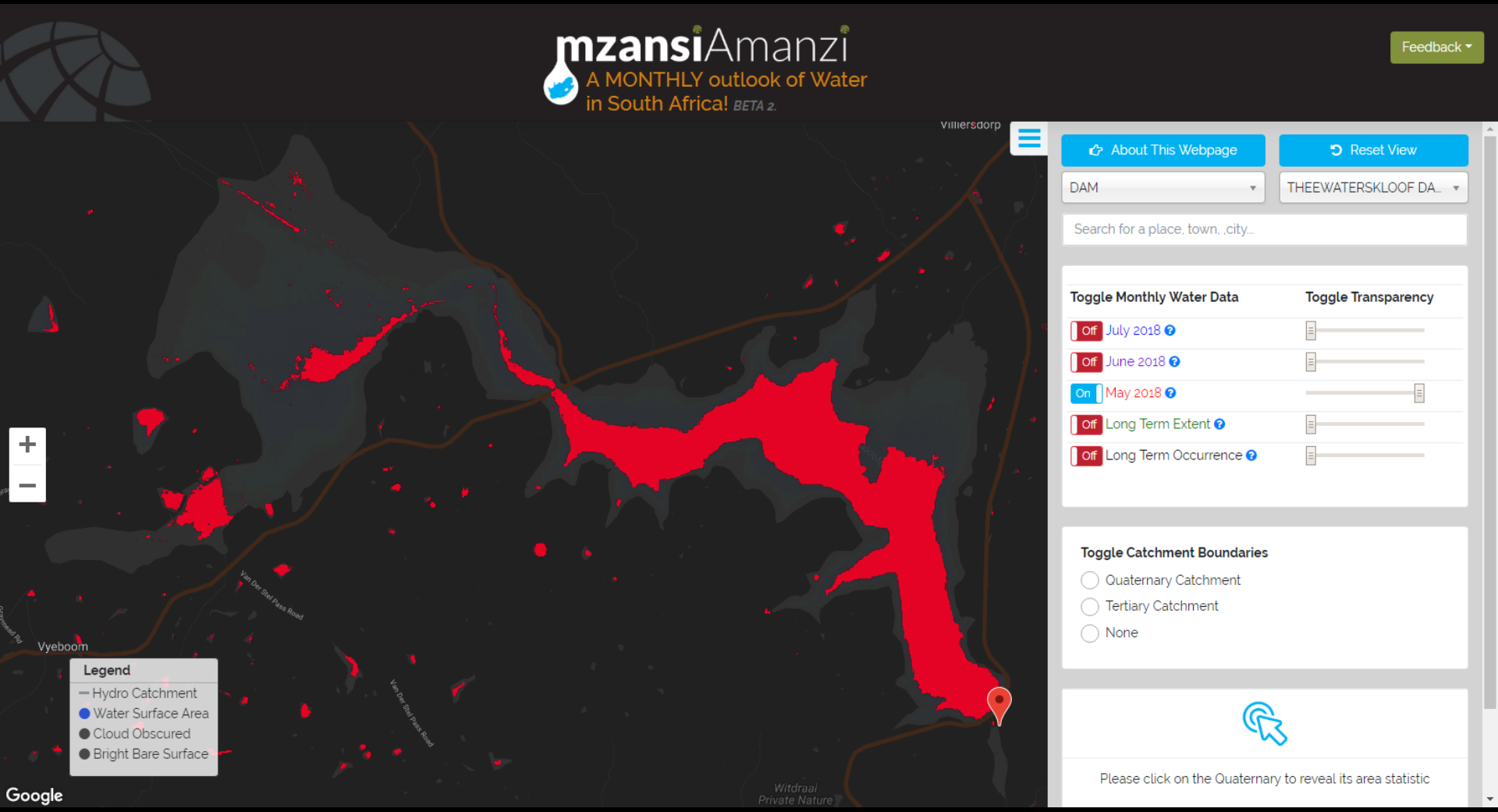
(July 2018)

Theewaterskloof Dam: PREVIOUS month water



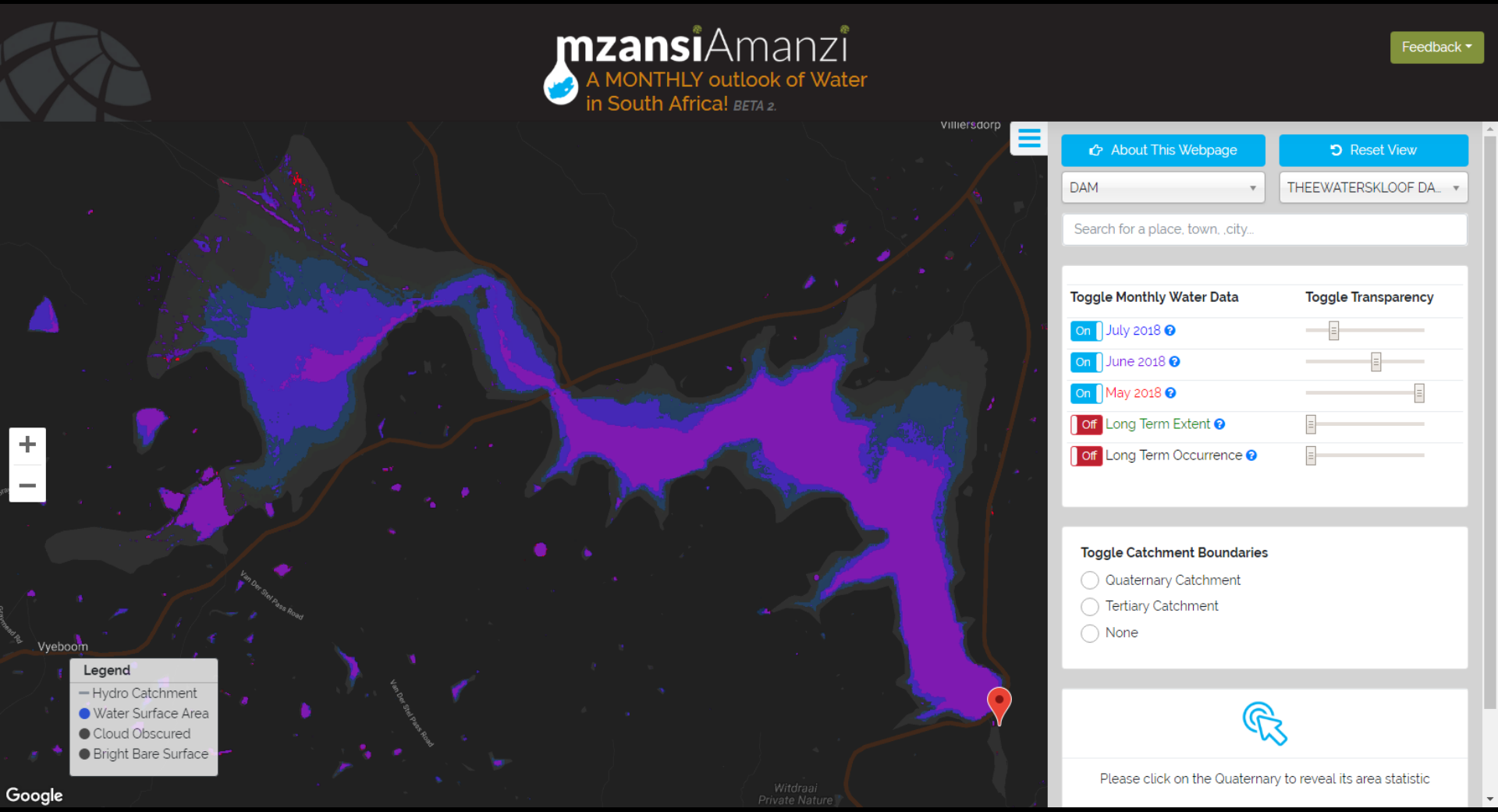
(June 2018)

Theewaterskloof Dam: PRE-PREVIOUS month water

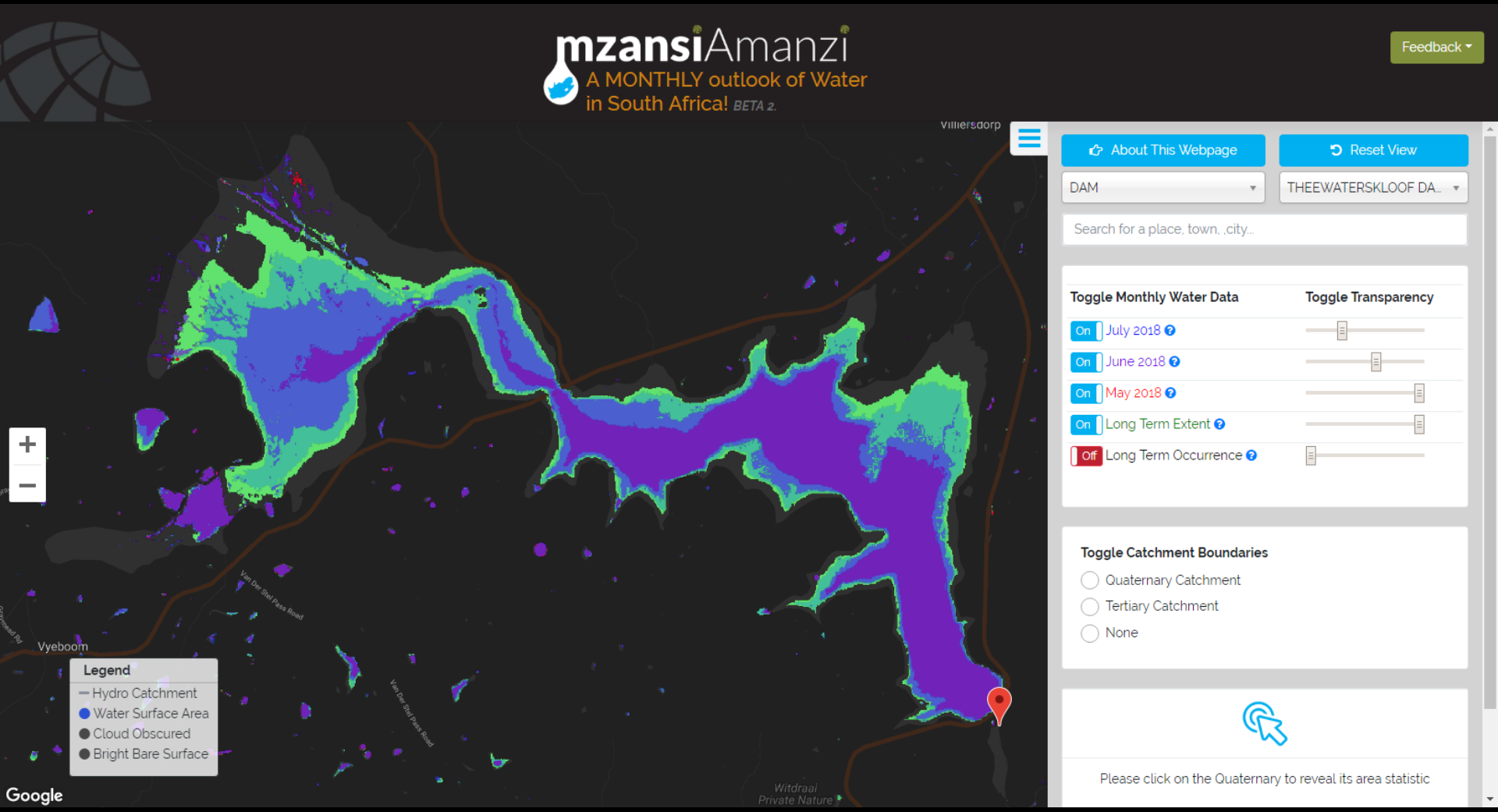


(May 2018)

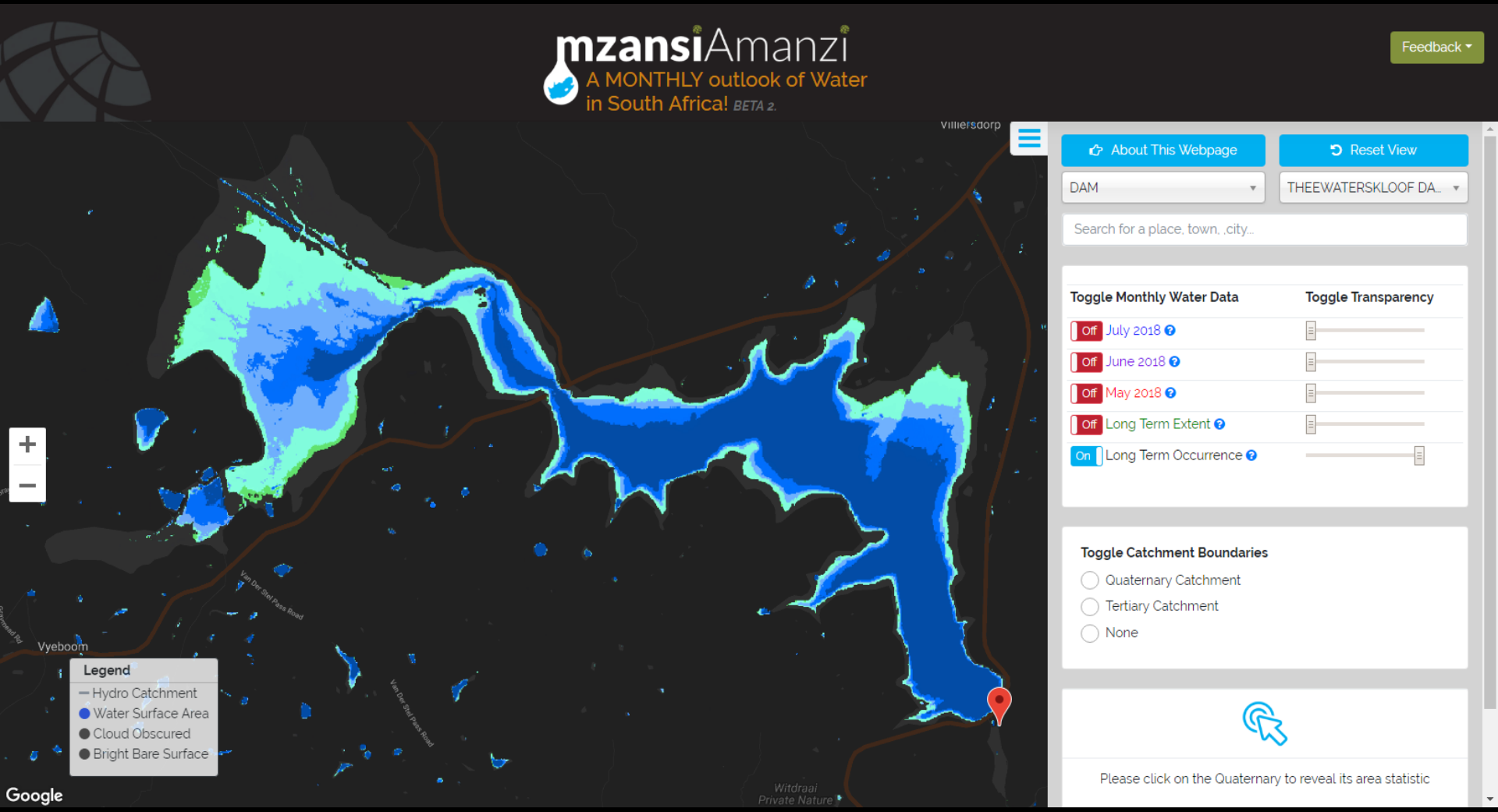
Theewaterskloof Dam: 3 months comparison



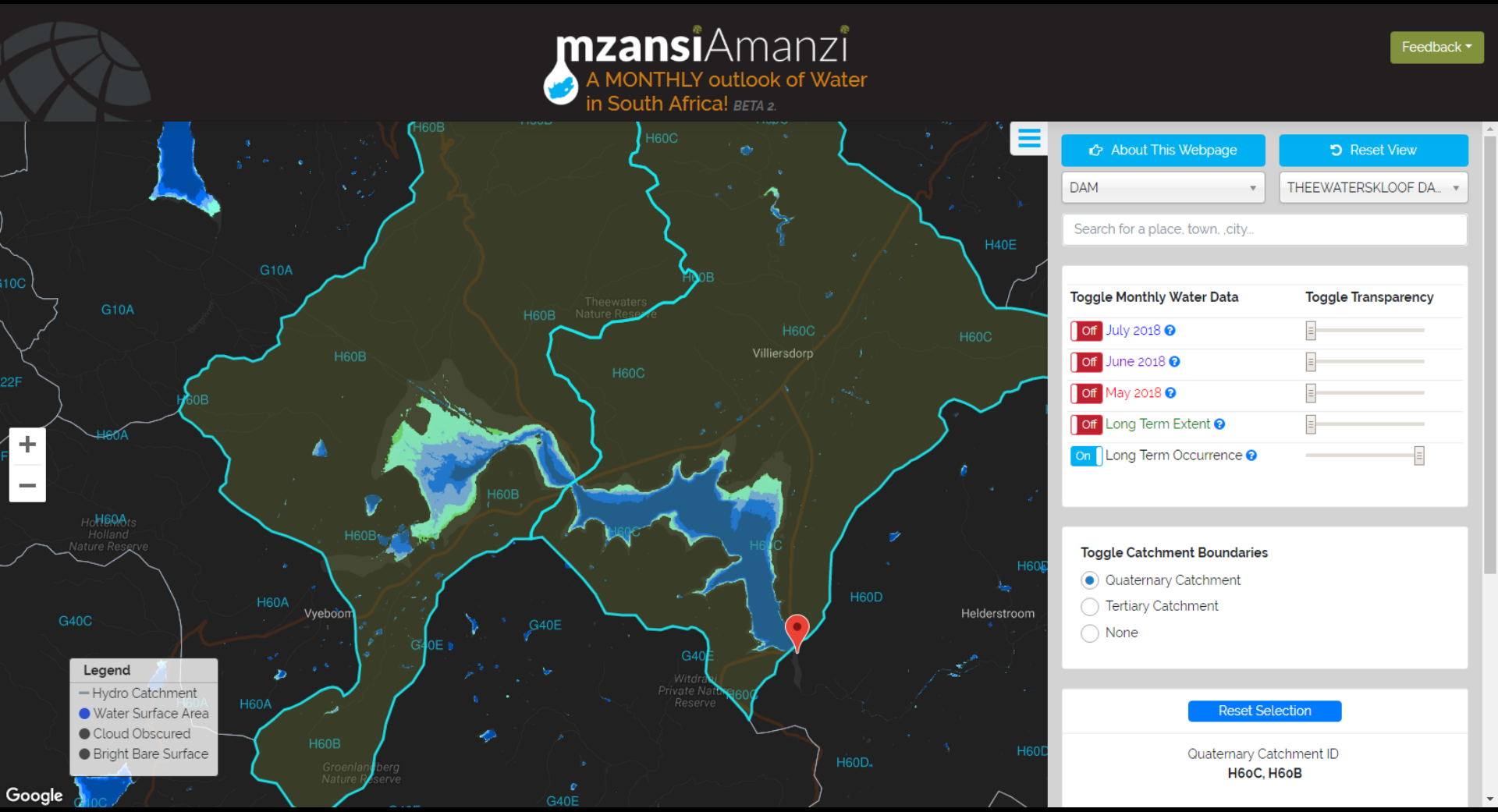
Comparing against a long-term recorded extent



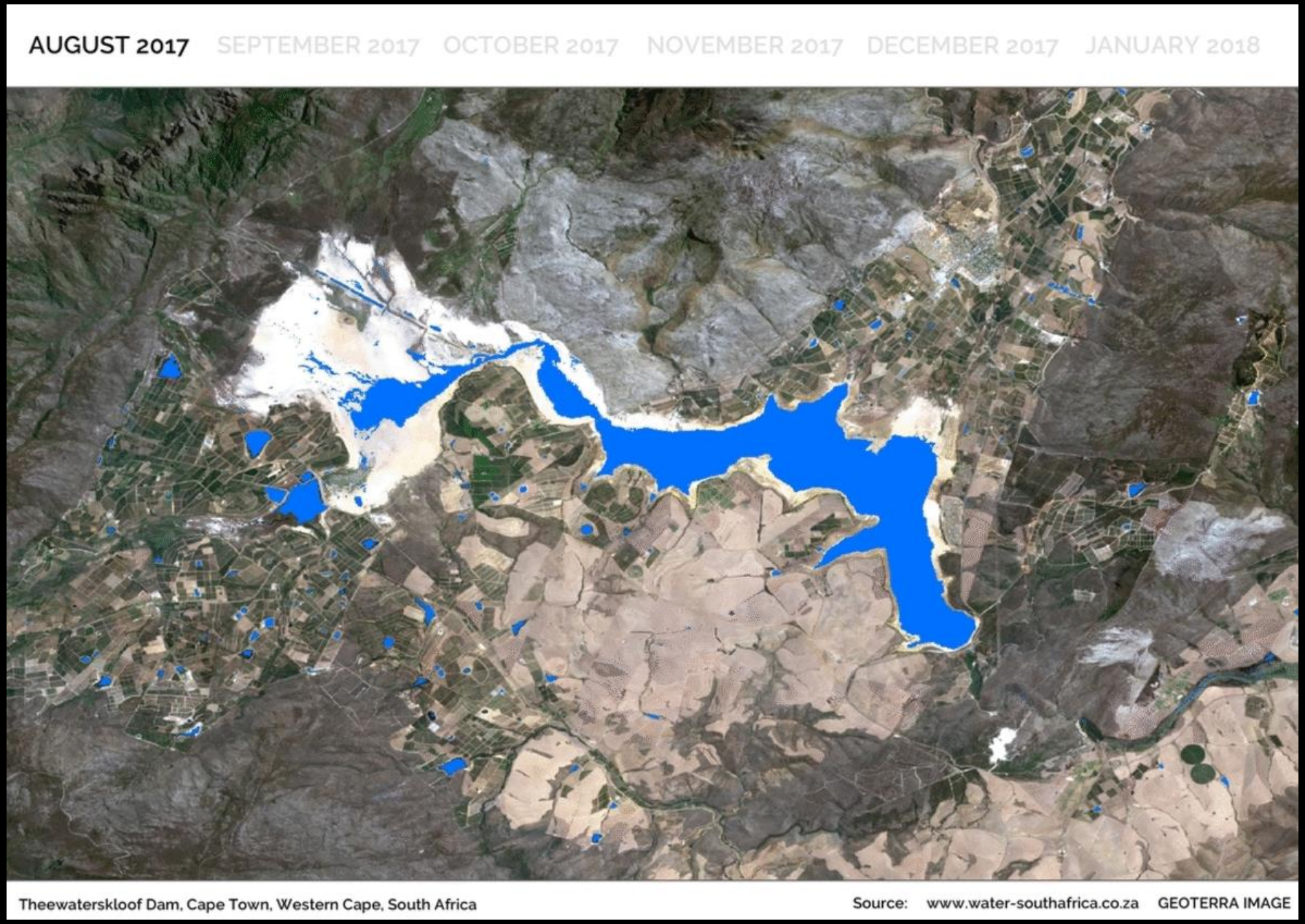
Long-term water occurence (index)



Quaternary catchment trends & reporting

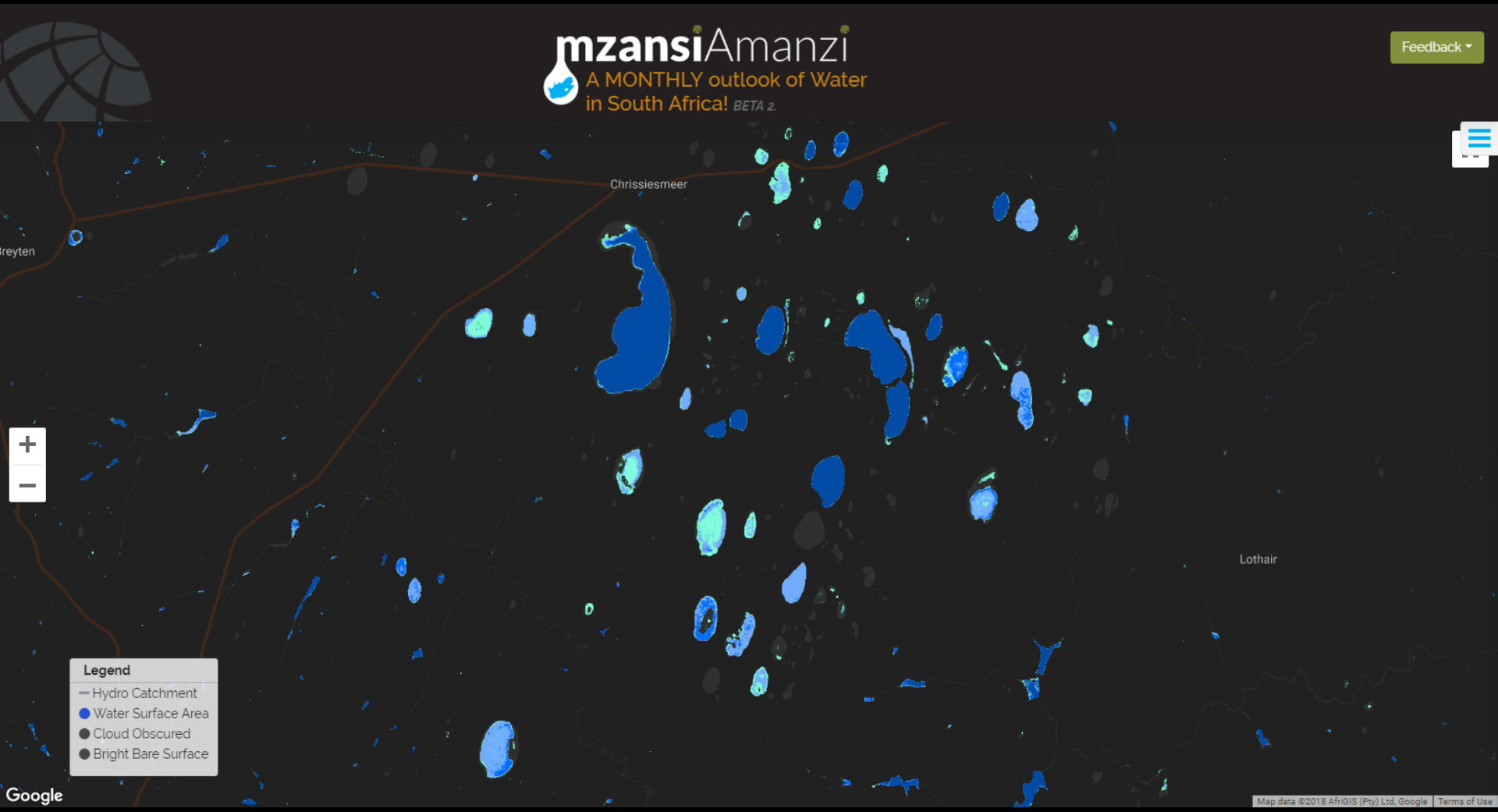


During Western Cape's Water Crisis Period



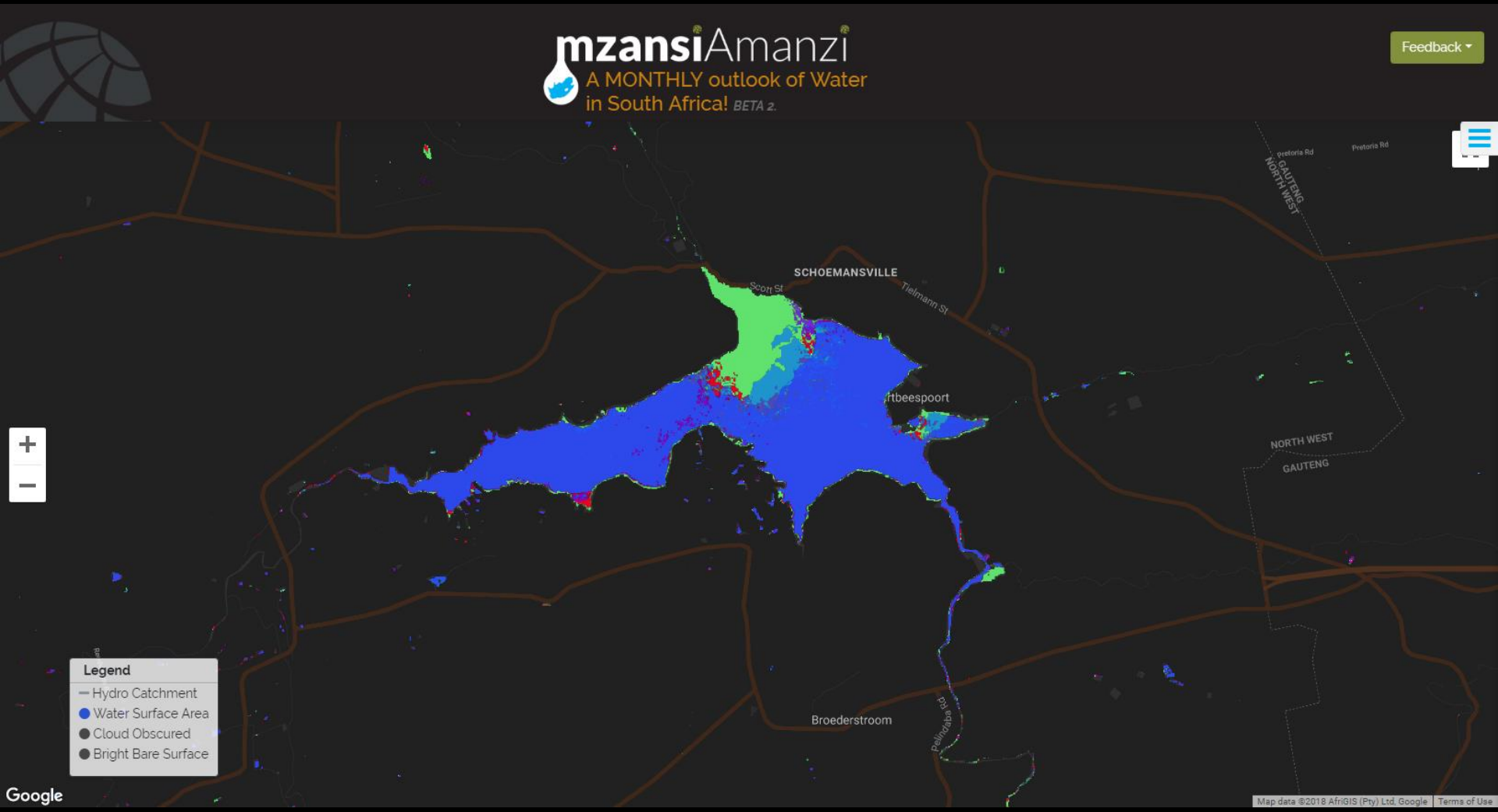
Some other regional examples in southern Africa

Chrissiemeer Pans, Mpumalanga



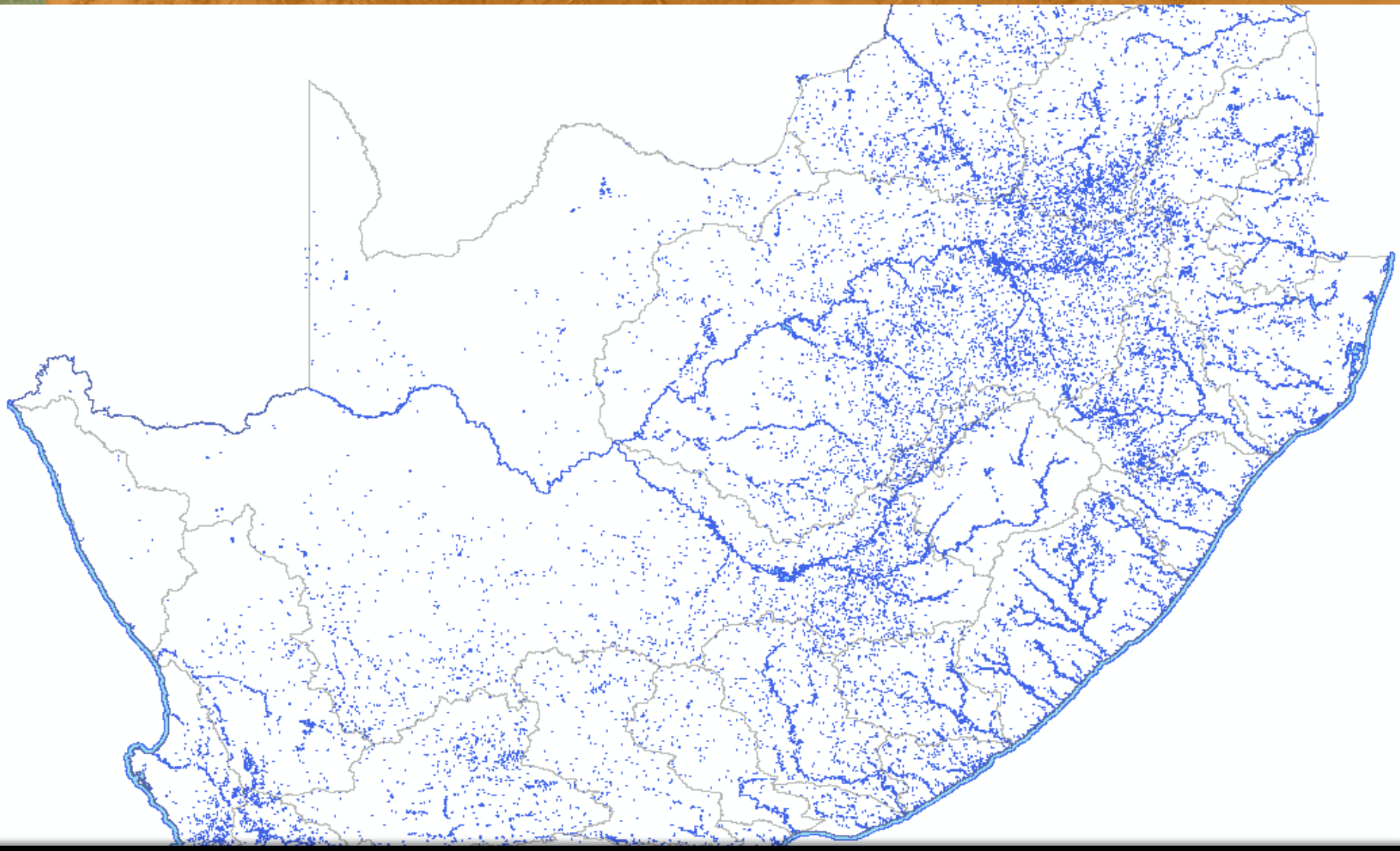
Long-term occurrence shows drought resilience

Hartbeesport Dam



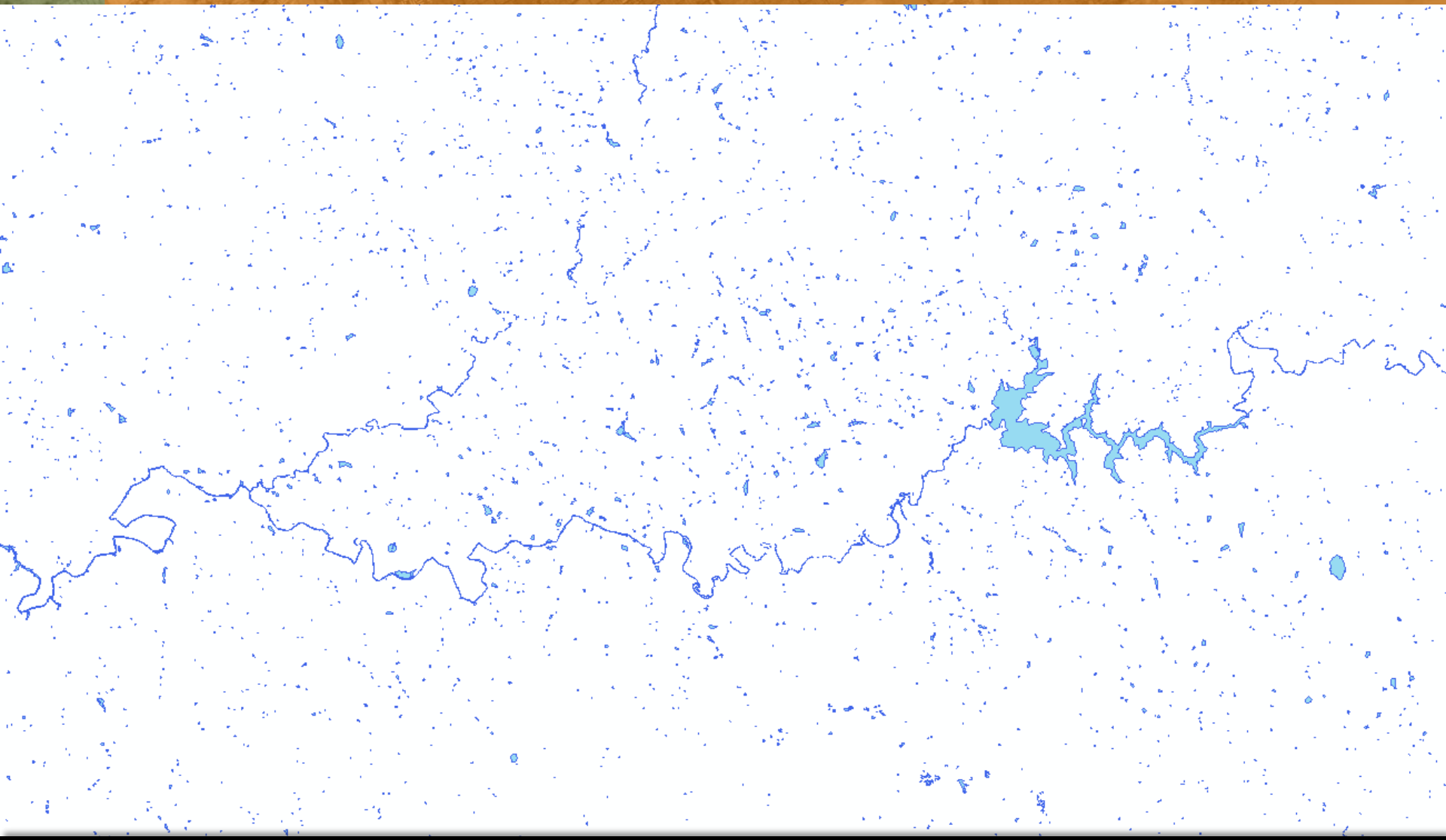
3 months movement of water hyacinth 'islands'

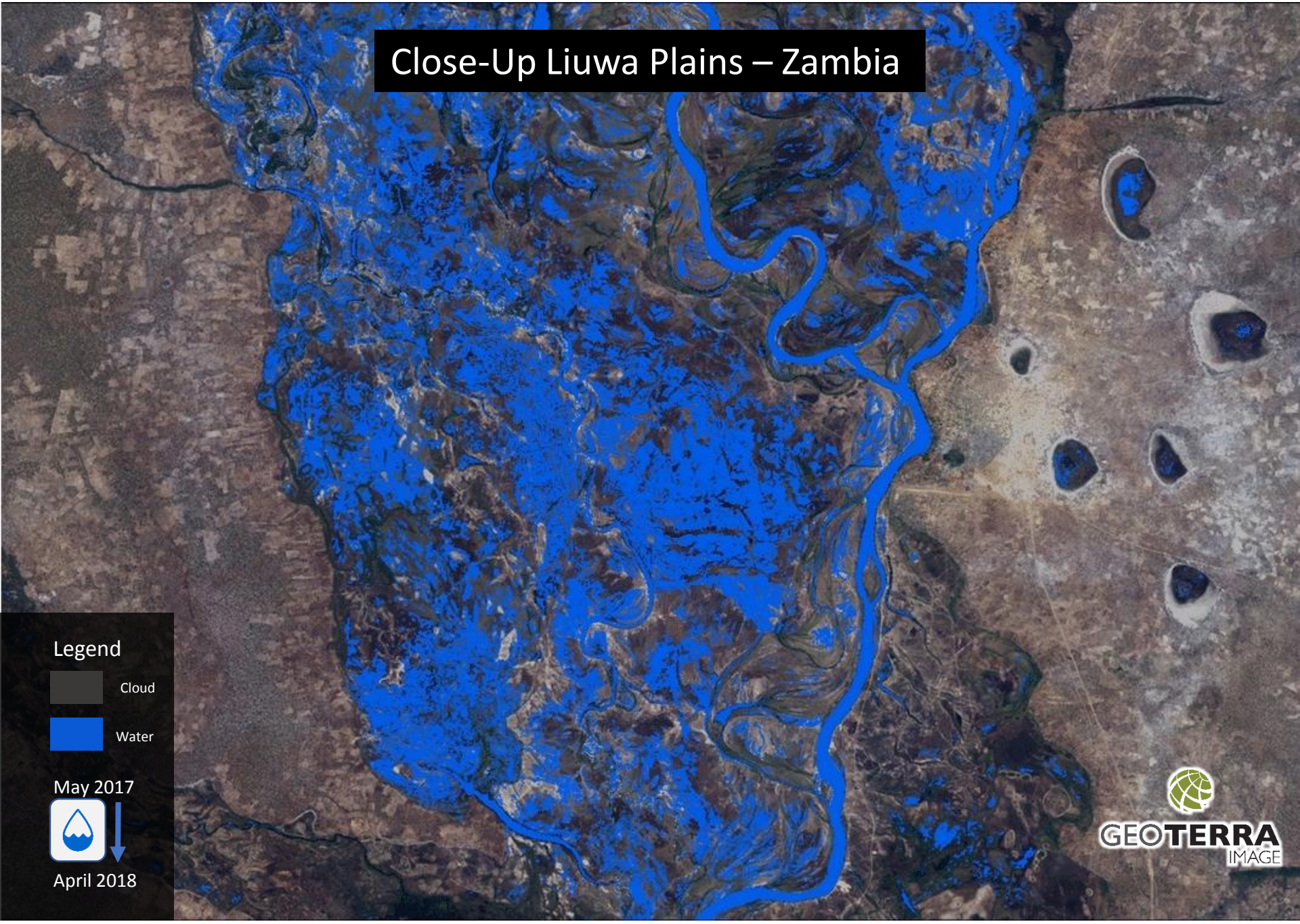
GIS shape file extraction of combined surface water areas across South Africa, 01-2016 to 03-2018.



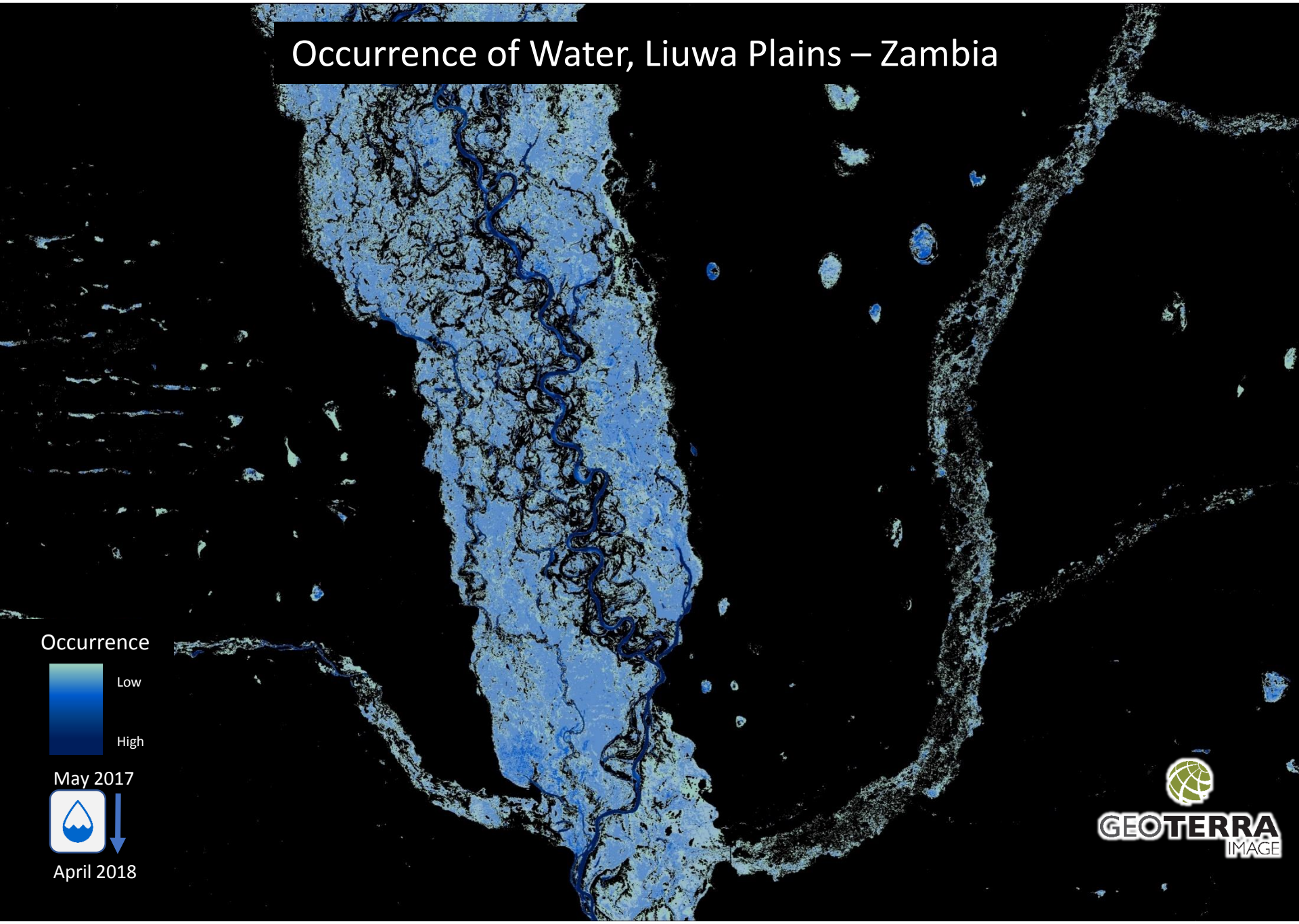
GEOTERRA IMAGE

GIS shape file extraction of combined surface water areas across South Africa, 01-2016 to 03-2018 (detail).

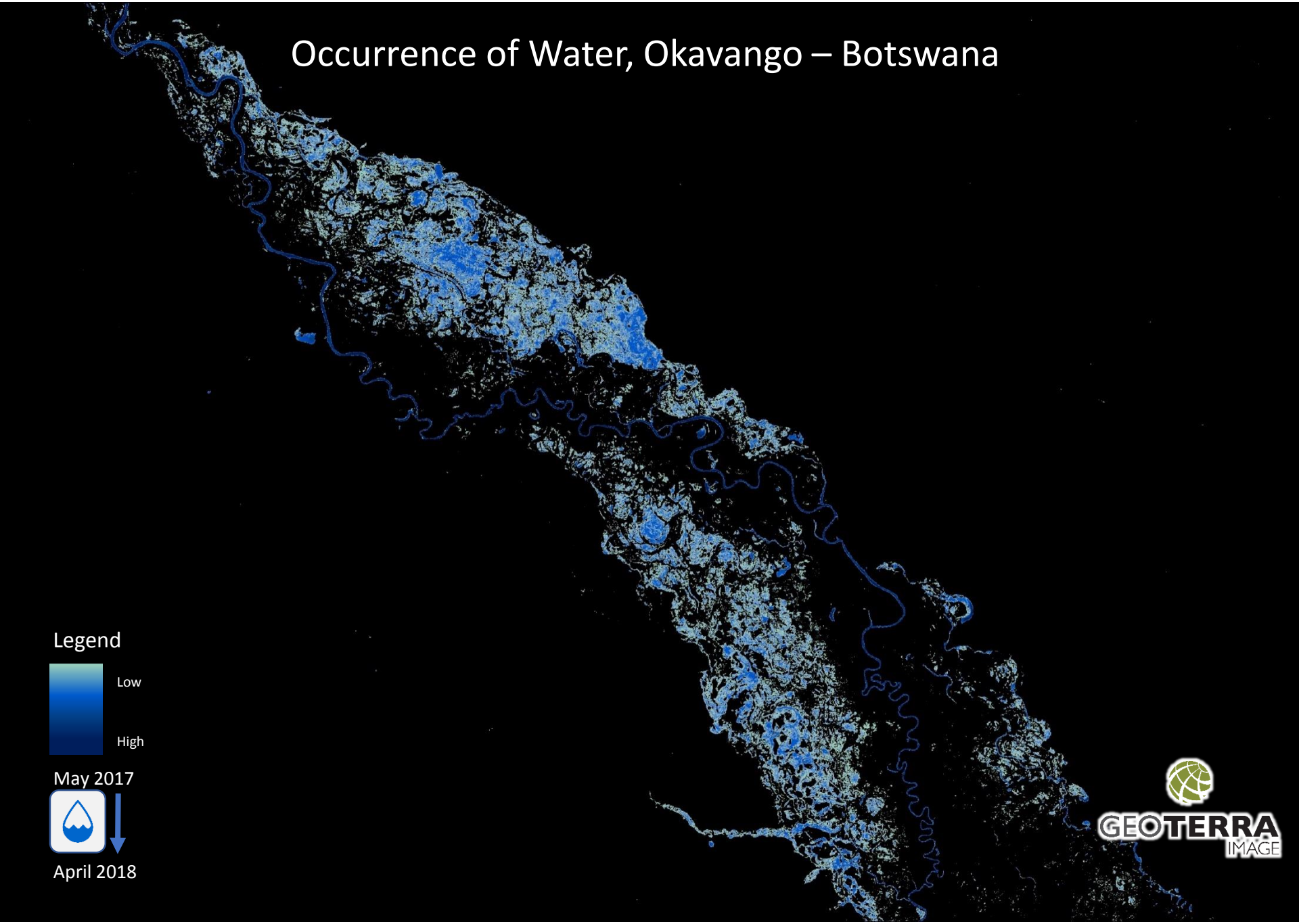



Close-Up Liuwa Plains – Zambia
Legend
Cloud
Water
May 2017
April 2018
GEOTERRA
IMAGE

Occurrence of Water, Liuwa Plains – Zambia

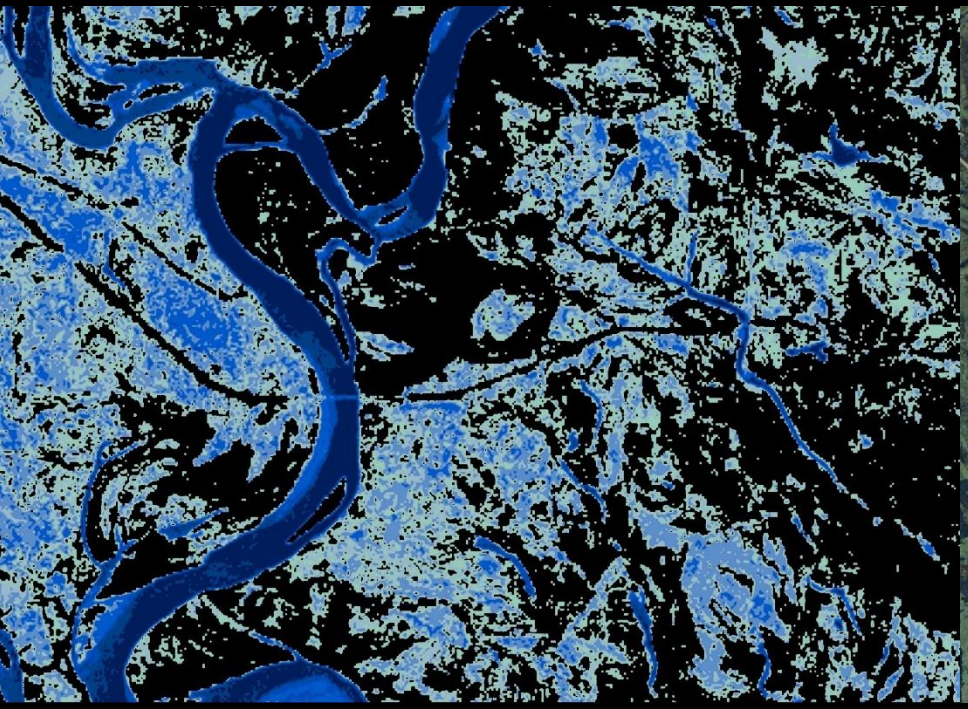


Occurrence of Water, Okavango – Botswana



Comparing GTI Water Classification to Hi-Res Google Imagery

May 2017 to April 2018



Water Occurrence
Multi-temporal

April 2016

Google Earth Imagery
Single Snapshot

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Mzansi Amanzi : the next steps

EKOSOURCE

GEOTERRA IMAGE

Mzansi Amanzi : the future

Additional monthly reporting content:

- **Individual water volume estimates for all significant dams**

EKOSOURCE Partnership with GTI

Mzansi Amanzi : the future

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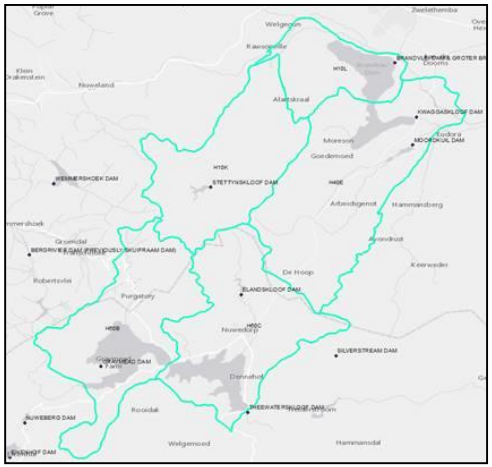
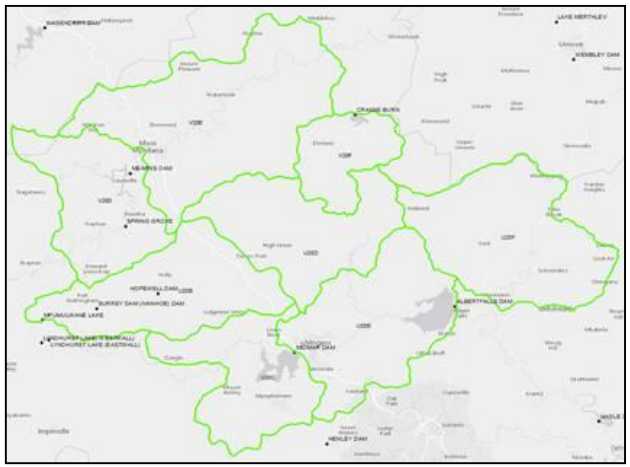
- **Future predictive flow and volume estimates**

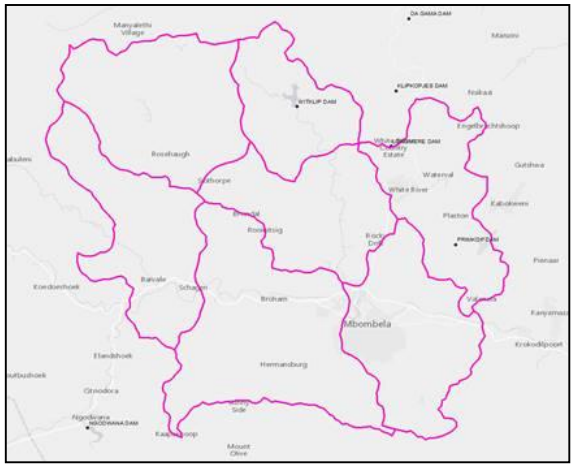
EKOSOURCE Partnership with GTI

Mzansi Amanzi : Sample datasets

Monthly water data: Jan 2016 – May 2018







Breede (Theewaterskloof)	Umgeni (Midmar / Albert Falls)	Mbombela (Nelspruit Surrounds)
H40 E,L, H60 B,C, H10 K	U20 B,C,D,E,F, V20 D,E,F	X22 B,C,D,E,F,H,J

Raster TIFF file formats, 2 x information classes (water[1] & cloud obscured[2]), Geographic coordinates

Mzansi Amanzi : thank you !

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