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science
& technology

Department:
Science and Technology
REPUBLIC OF SOUTH AFRICA



UNIVERSITY OF
KWAZULU-NATAL
INYUVESI
YAKWAZULU-NATALI

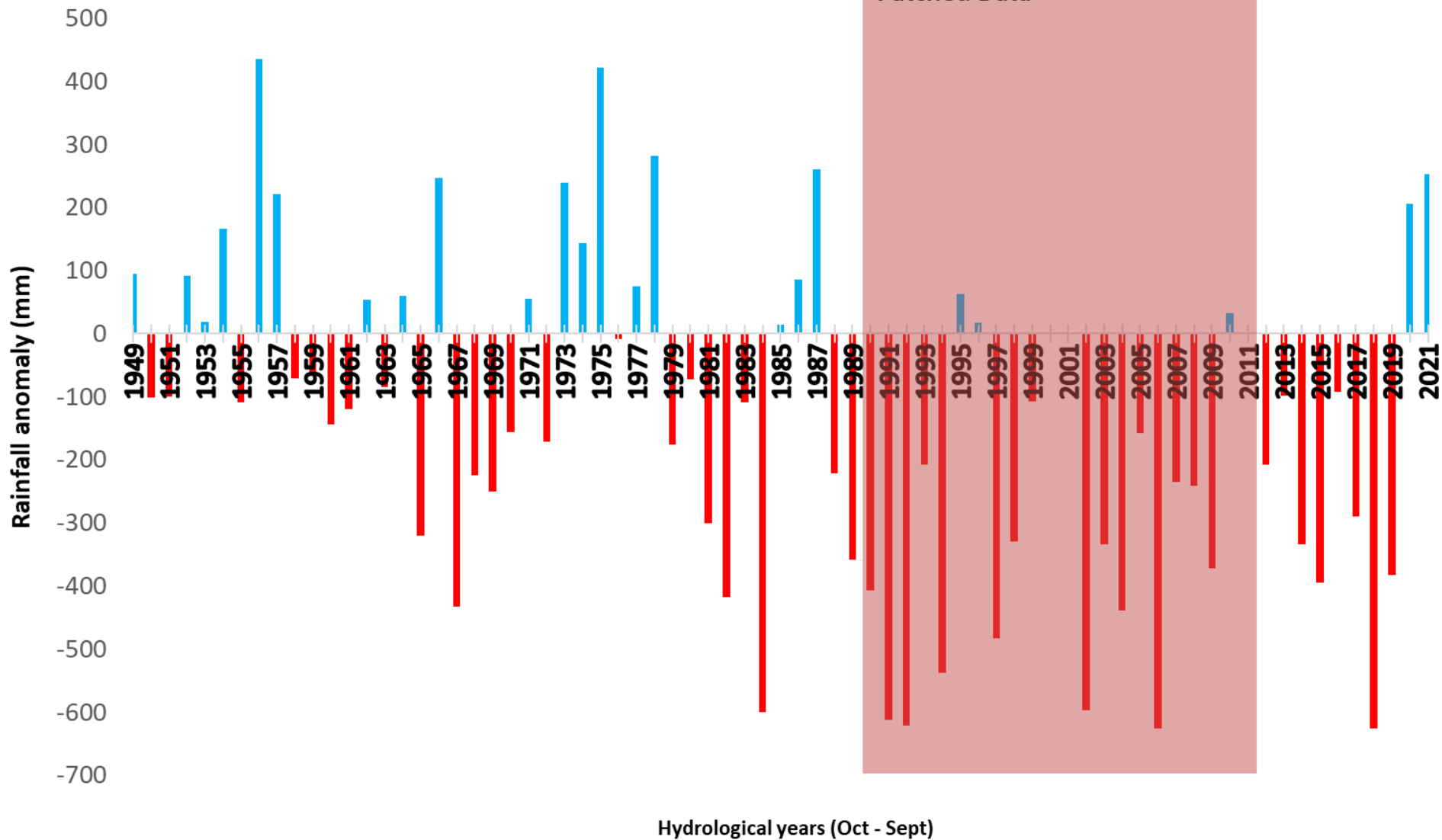


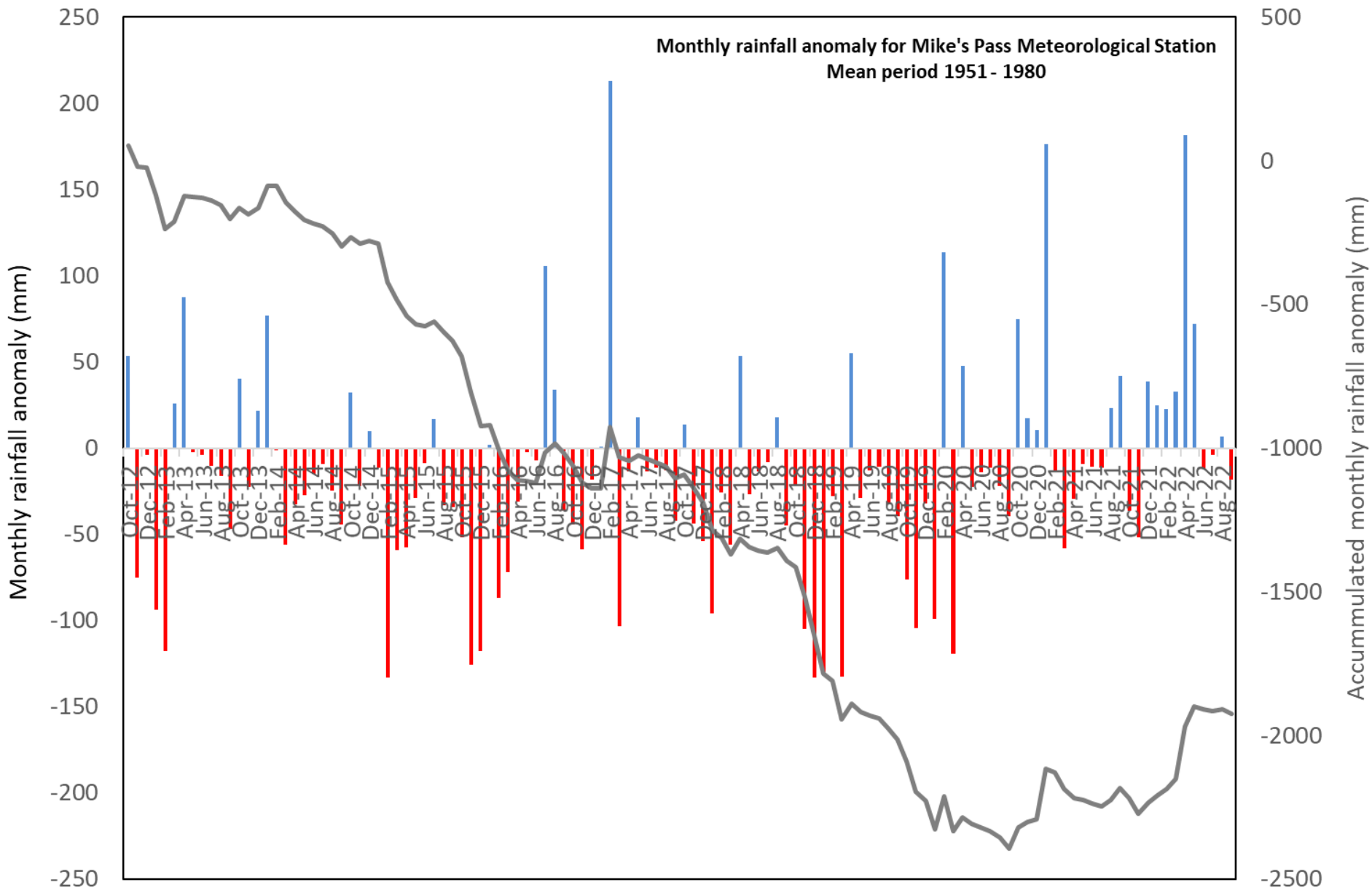
SAEON
South African Environmental
Observation Network

- Has the climate in this area changed? And how?
- What changes have the biggest impact on you and why?
- What are you most worried about with the climate/weather?



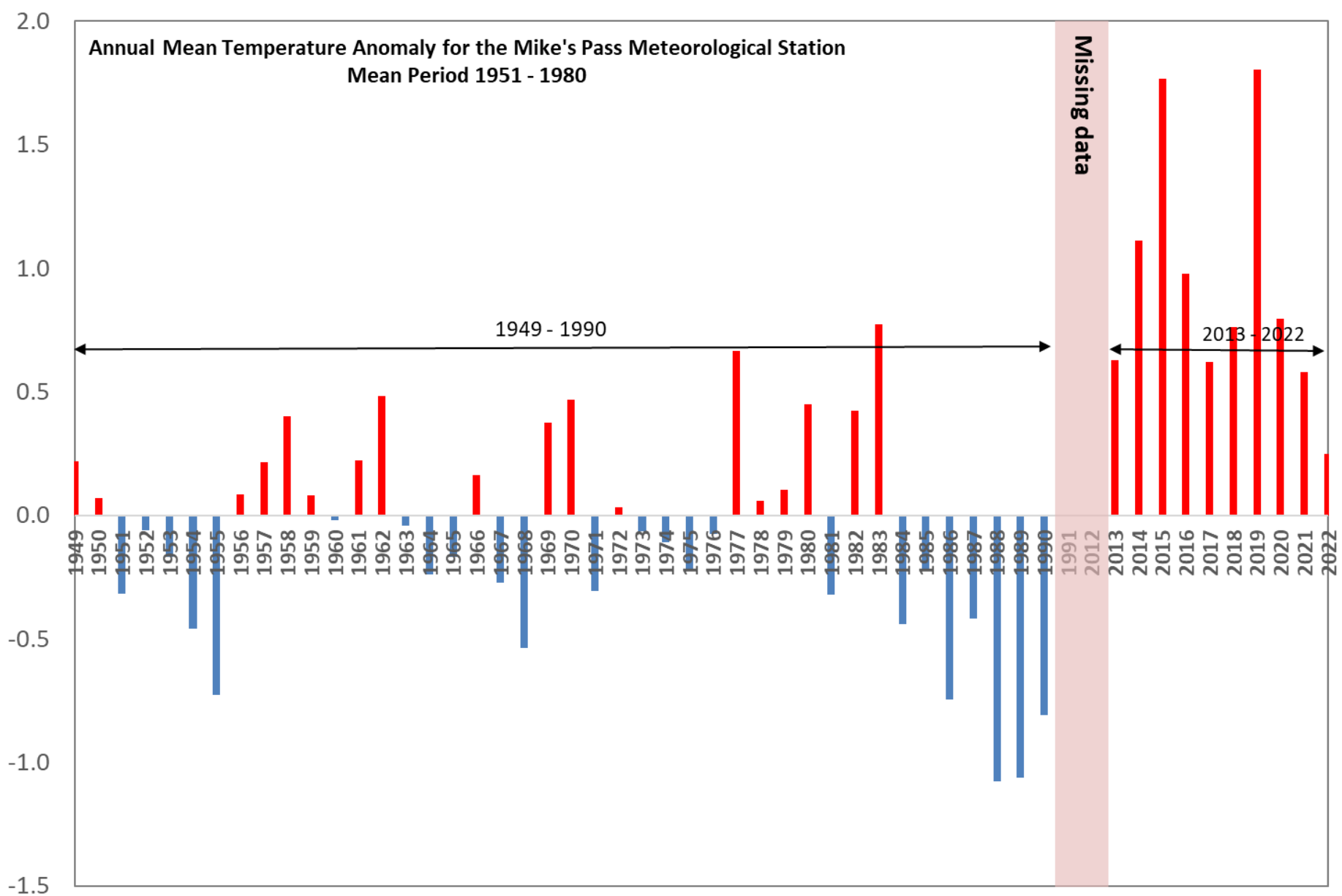
Annual rainfall anomaly for Mike's Pass Meteorological Station
Mean period 1951 - 1980





Annual Mean Temperature Anomaly for the Mike's Pass Meteorological Station
Mean Period 1951 - 1980

Annual Mean Temperature Anomaly (°C)



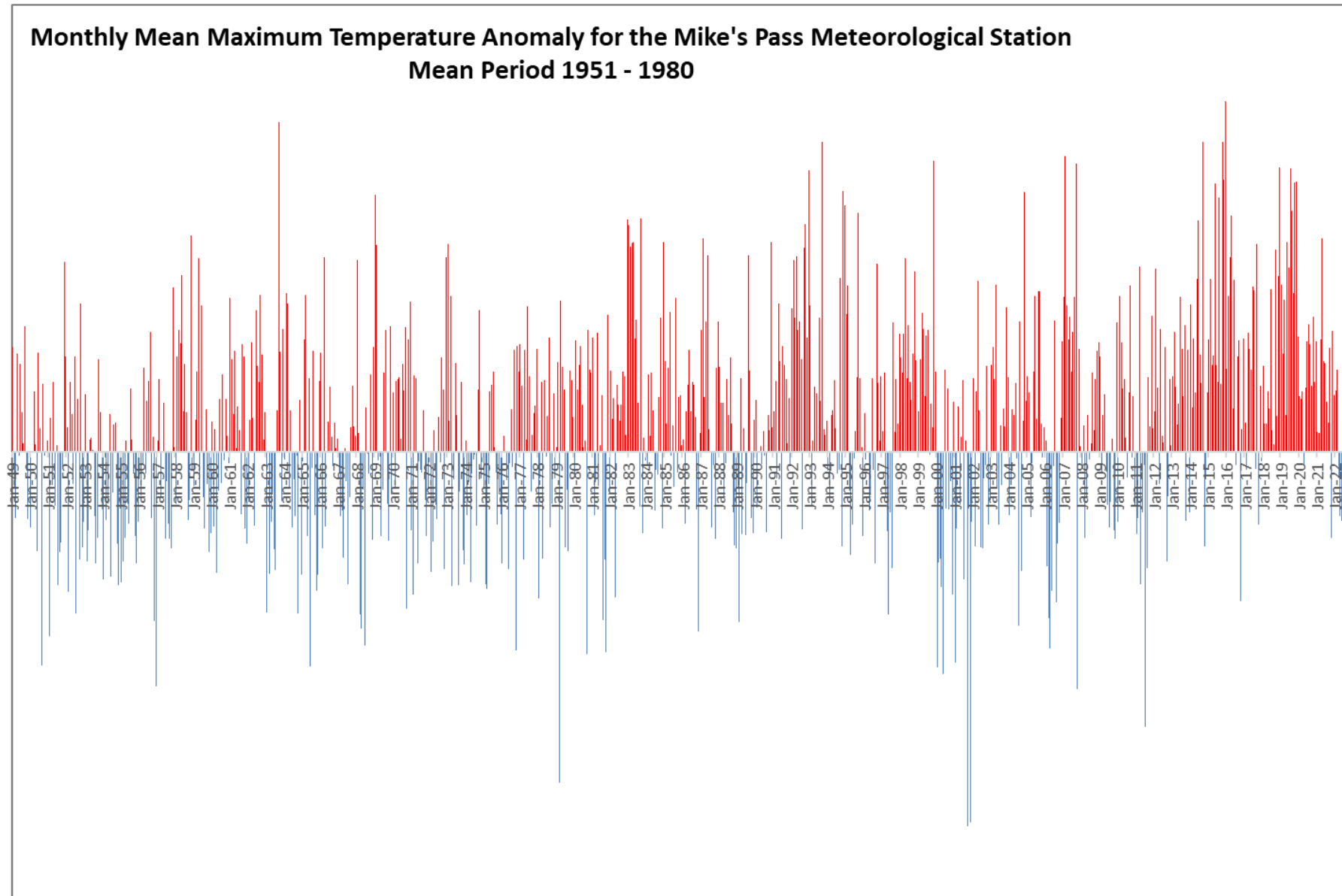
Monthly Mean Maximum Temperature Anomaly for the Mike's Pass Meteorological Station

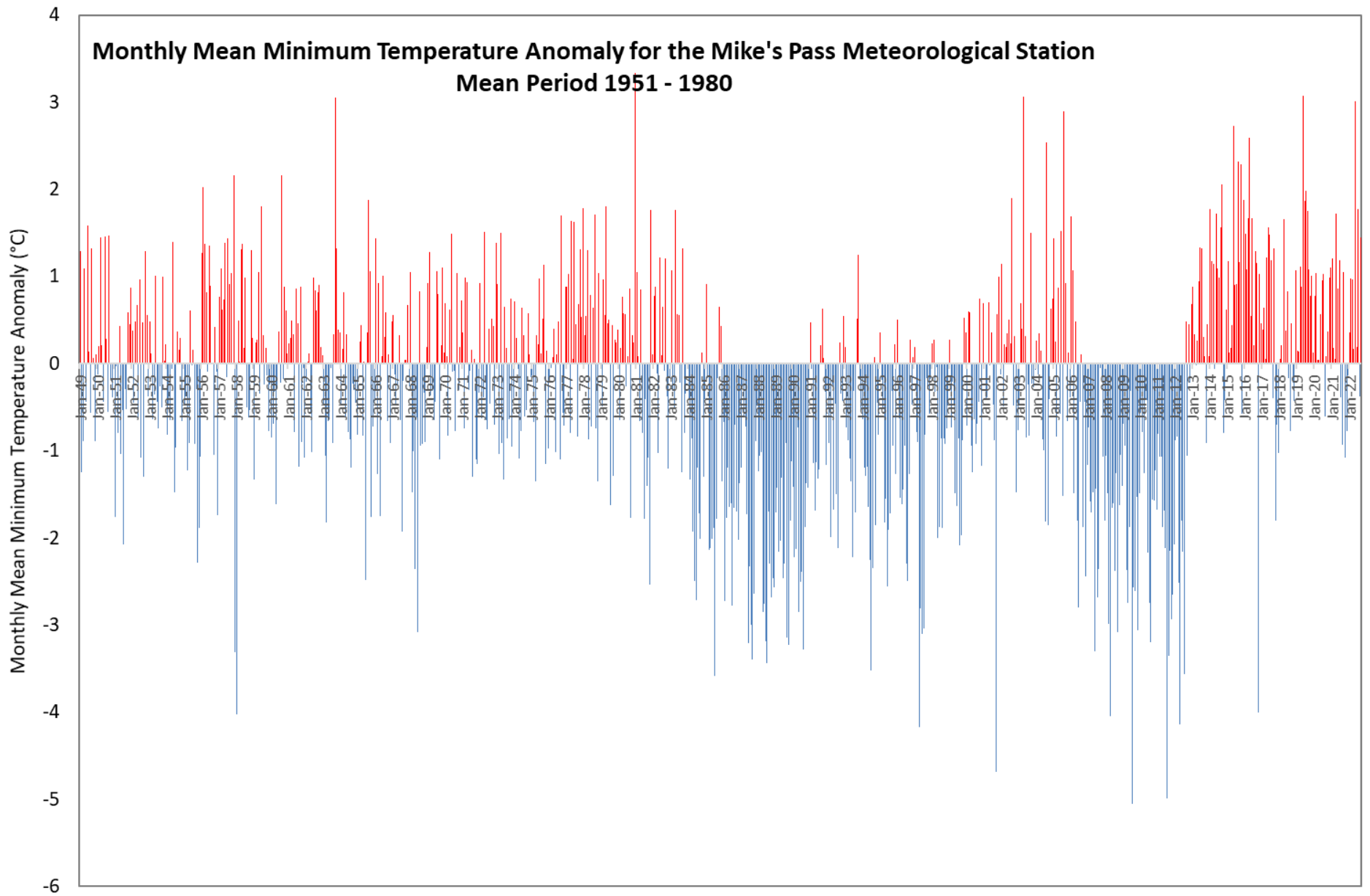
Mean Period 1951 - 1980

Monthly Mean Maximum Temperature Anomaly (°C)

6
4
2
0
-2
-4
-6

Jan-49 Jan-50 Jan-51 Jan-52 Jan-53 Jan-54 Jan-55 Jan-56 Jan-57 Jan-58 Jan-59 Jan-60 Jan-61 Jan-62 Jan-63 Jan-64 Jan-65 Jan-66 Jan-67 Jan-68 Jan-69 Jan-70 Jan-71 Jan-72 Jan-73 Jan-74 Jan-75 Jan-76 Jan-77 Jan-78 Jan-79 Jan-80 Jan-81 Jan-82 Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13 Jan-14 Jan-15 Jan-16 Jan-17 Jan-18 Jan-19 Jan-20 Jan-21 Jan-22



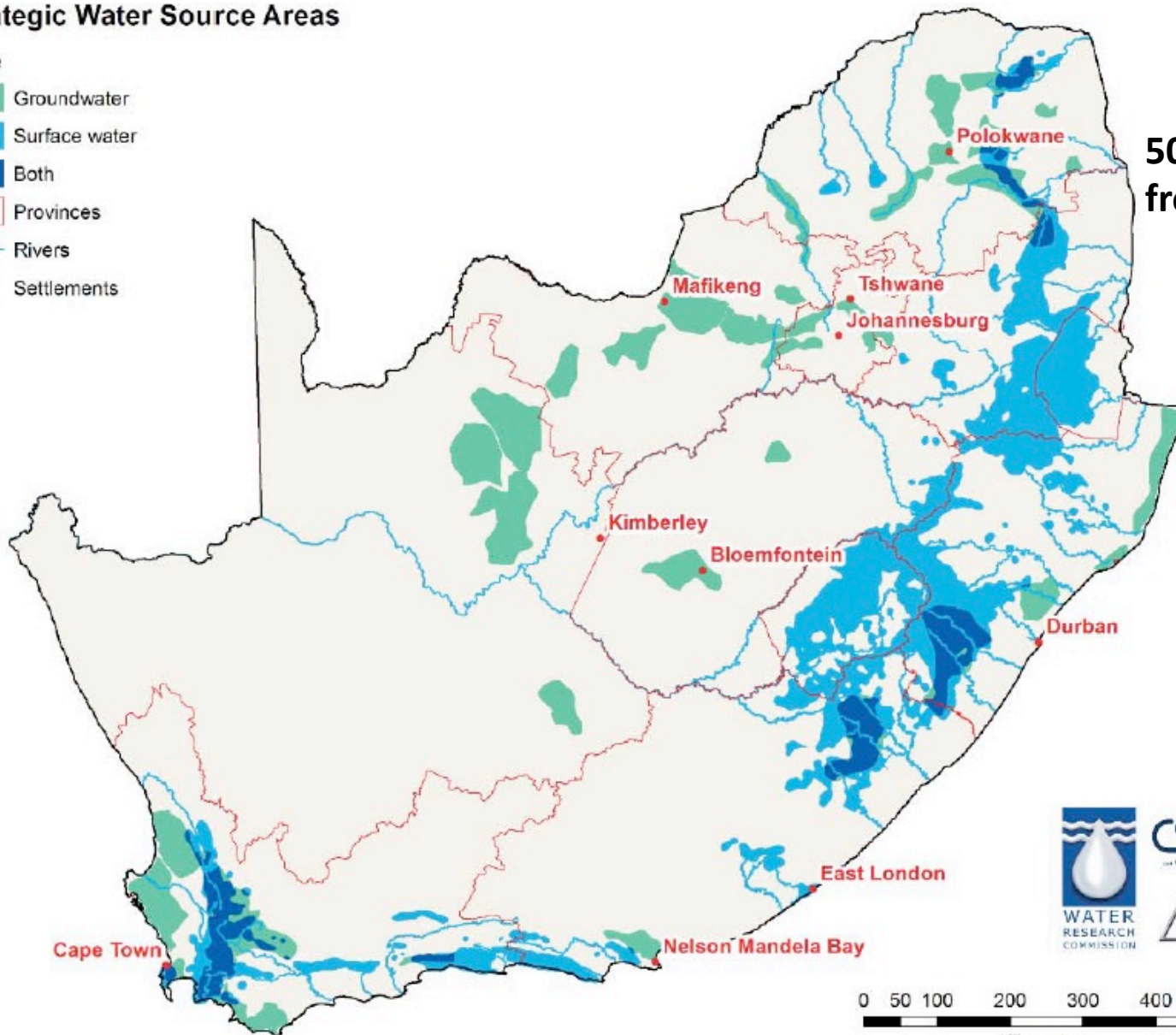


How important do you think this area is for supplying water to KwaZulu-Natal? And to South Africa?

Strategic Water Source Areas

Type

- Groundwater
- Surface water
- Both
- Provinces
- Rivers
- Settlements

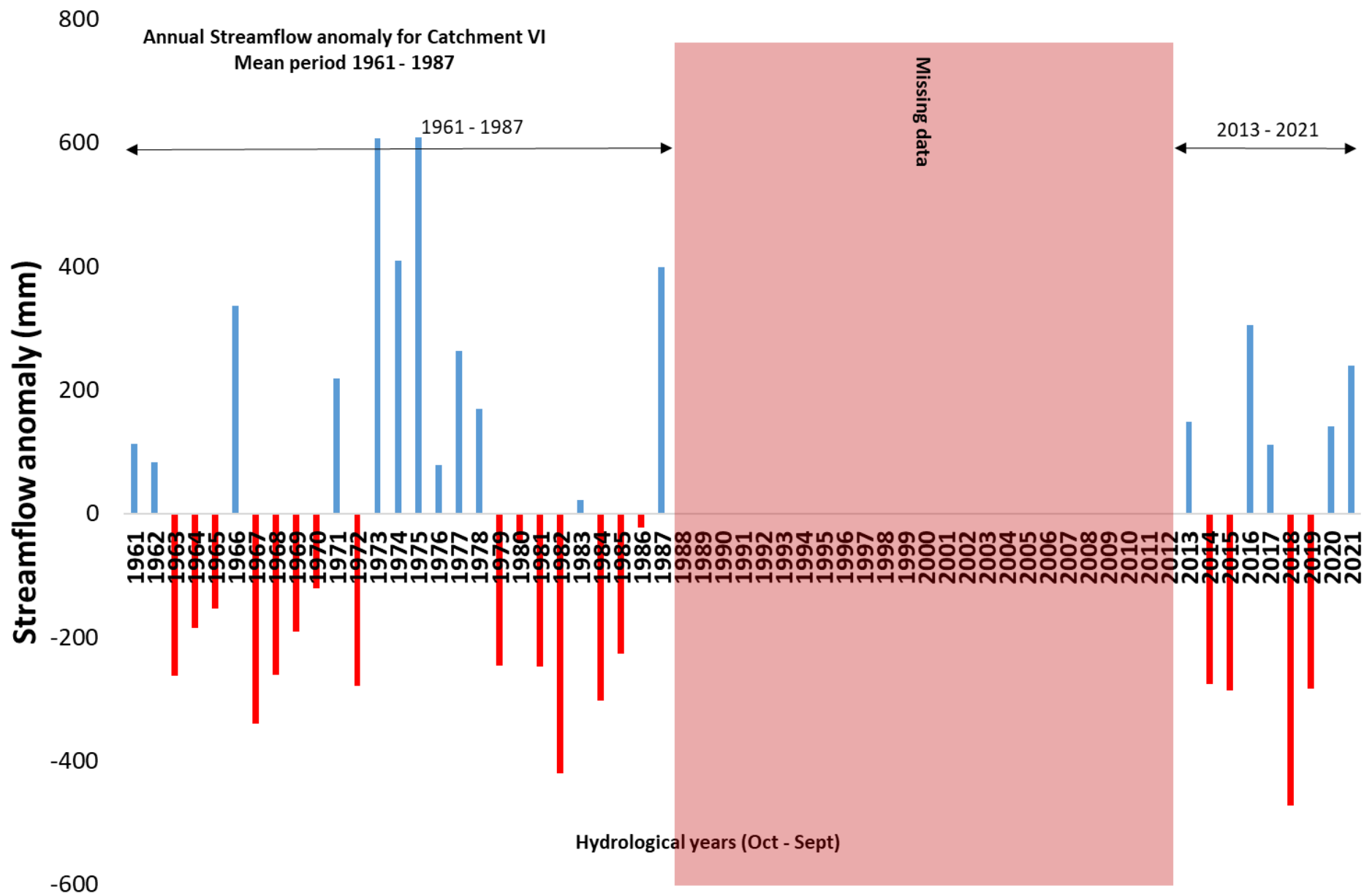


**50% of water produced
from 10% land area**

50% of population
70% of irrigation demand
64% of economic activity



Annual Streamflow anomaly for Catchment VI
Mean period 1961 - 1987



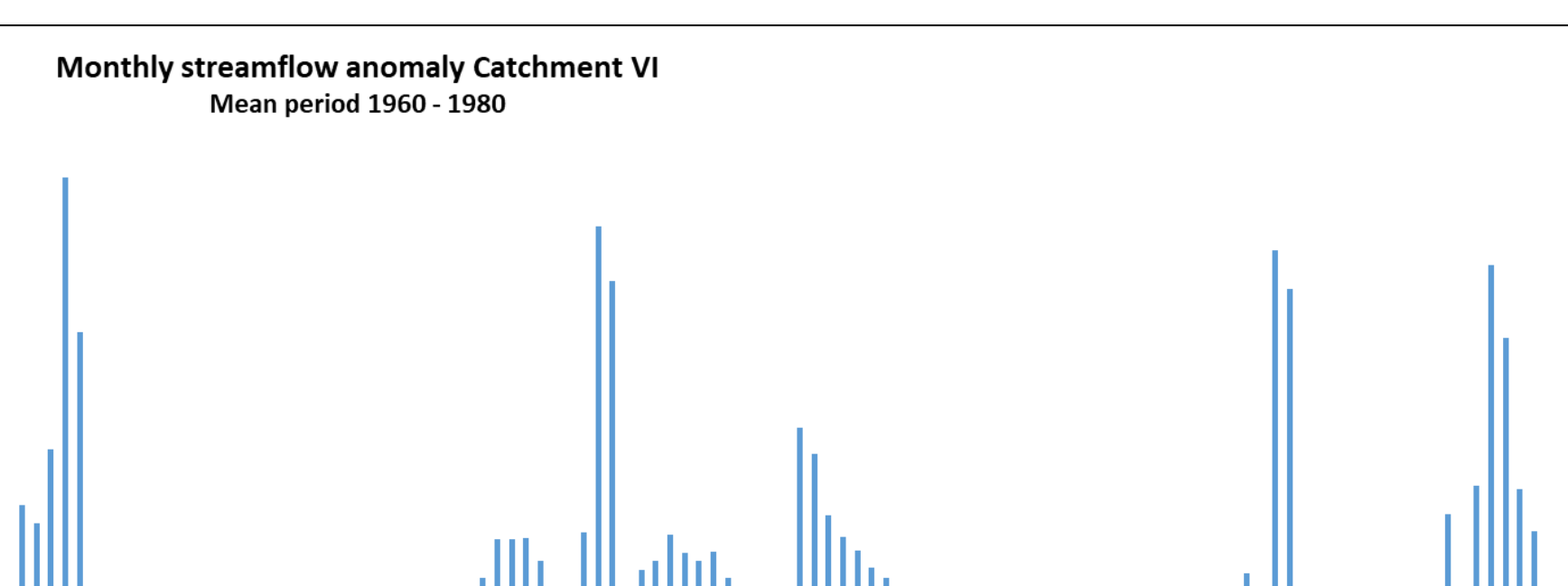
Monthly streamflow anomaly Catchment VI

Mean period 1960 - 1980

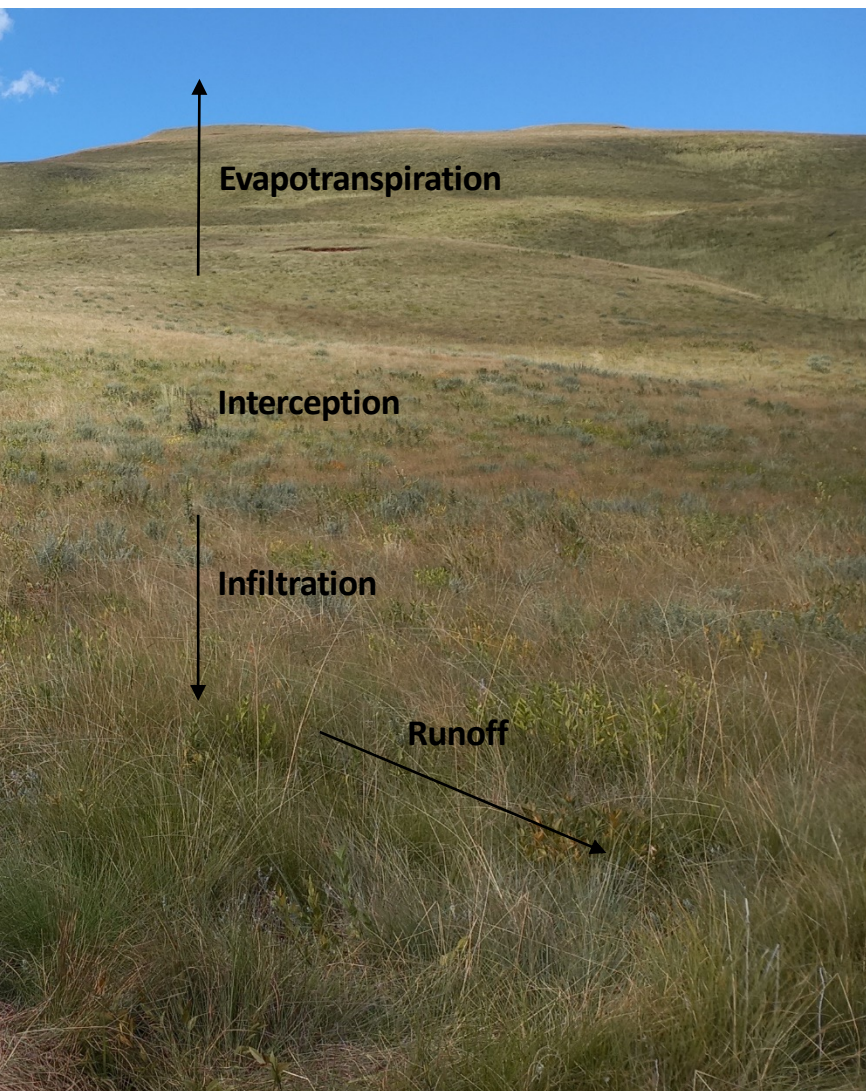
Monthly streamflow anomaly from historical mean (mm)

150
100
50
0
-50
-100
-150

Oct-13
Dec-13
Feb-14
Apr-14
Jun-14
Aug-14
Oct-14
Dec-14
Feb-15
Apr-15
Jun-15
Aug-15
Oct-15
Dec-15
Feb-16
Apr-16
Jun-16
Aug-16
Oct-16
Dec-16
Feb-17
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Dec-18
Feb-19
Apr-19
Jun-19
Aug-19
Oct-19
Dec-19
Feb-20
Apr-20
Jun-20
Aug-20
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Aug-21
Oct-21
Dec-21
Feb-22
Apr-22
Jun-22
Aug-22

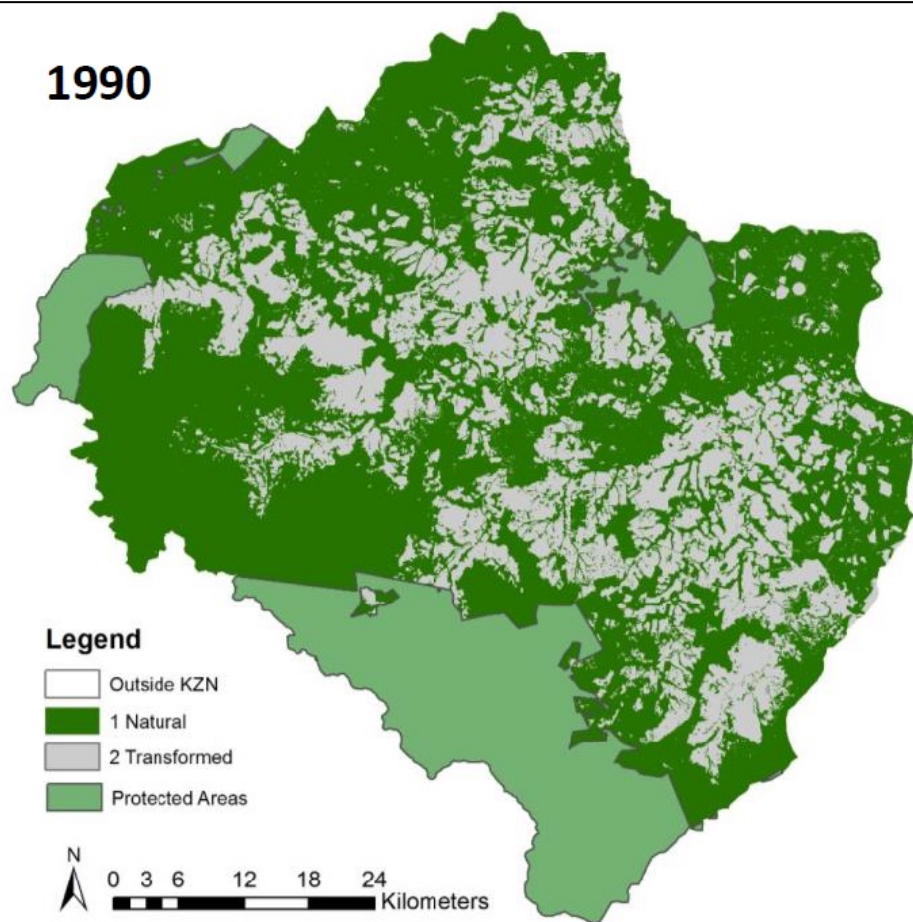




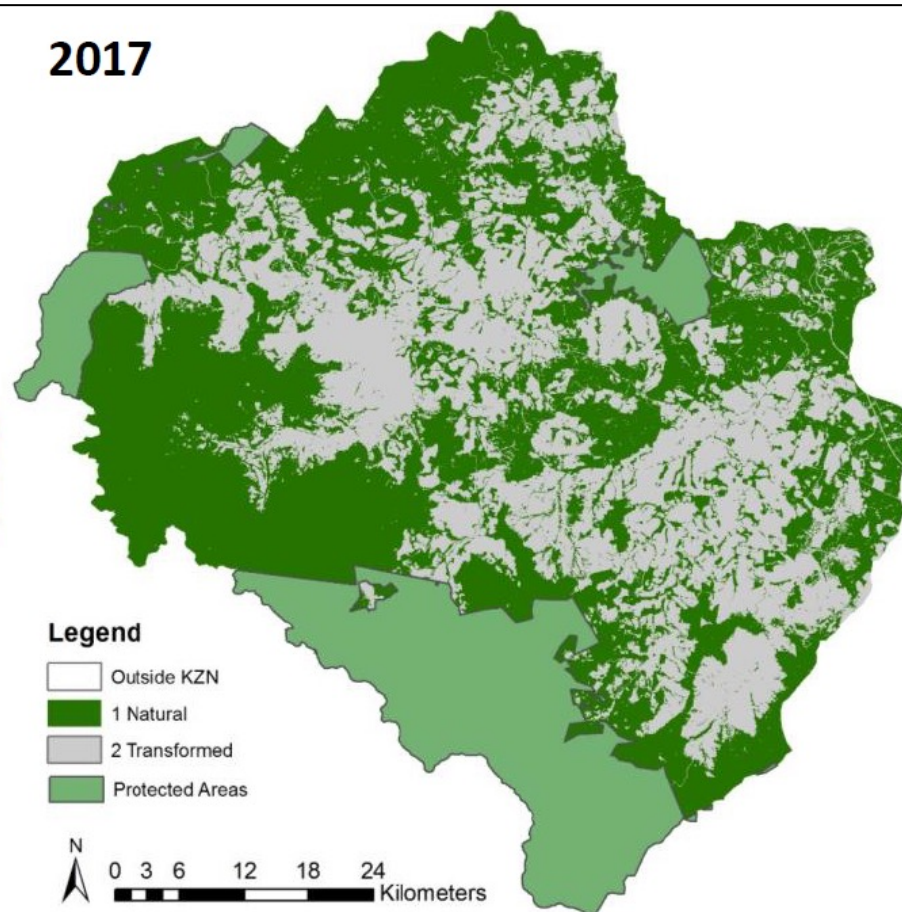


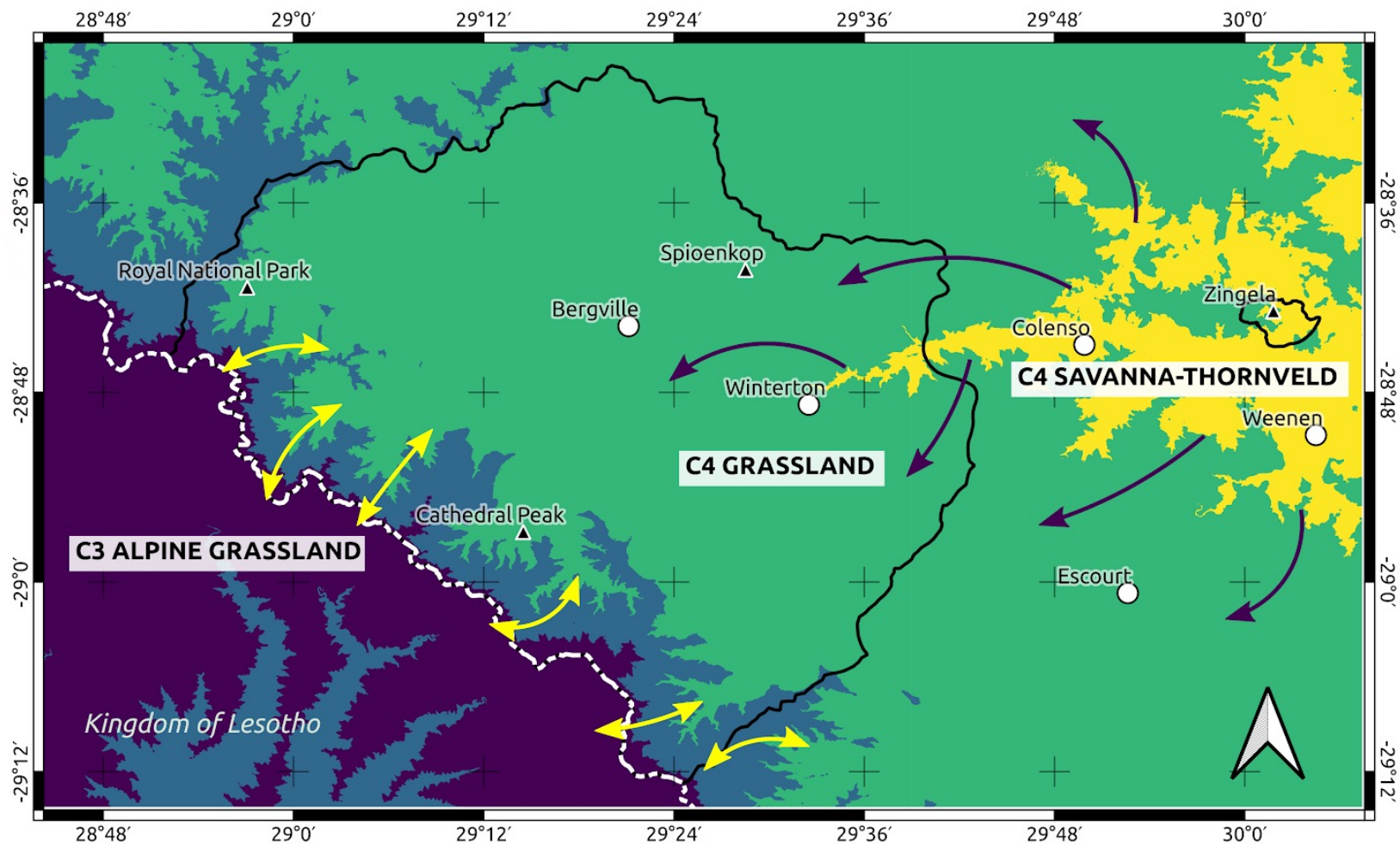


1990

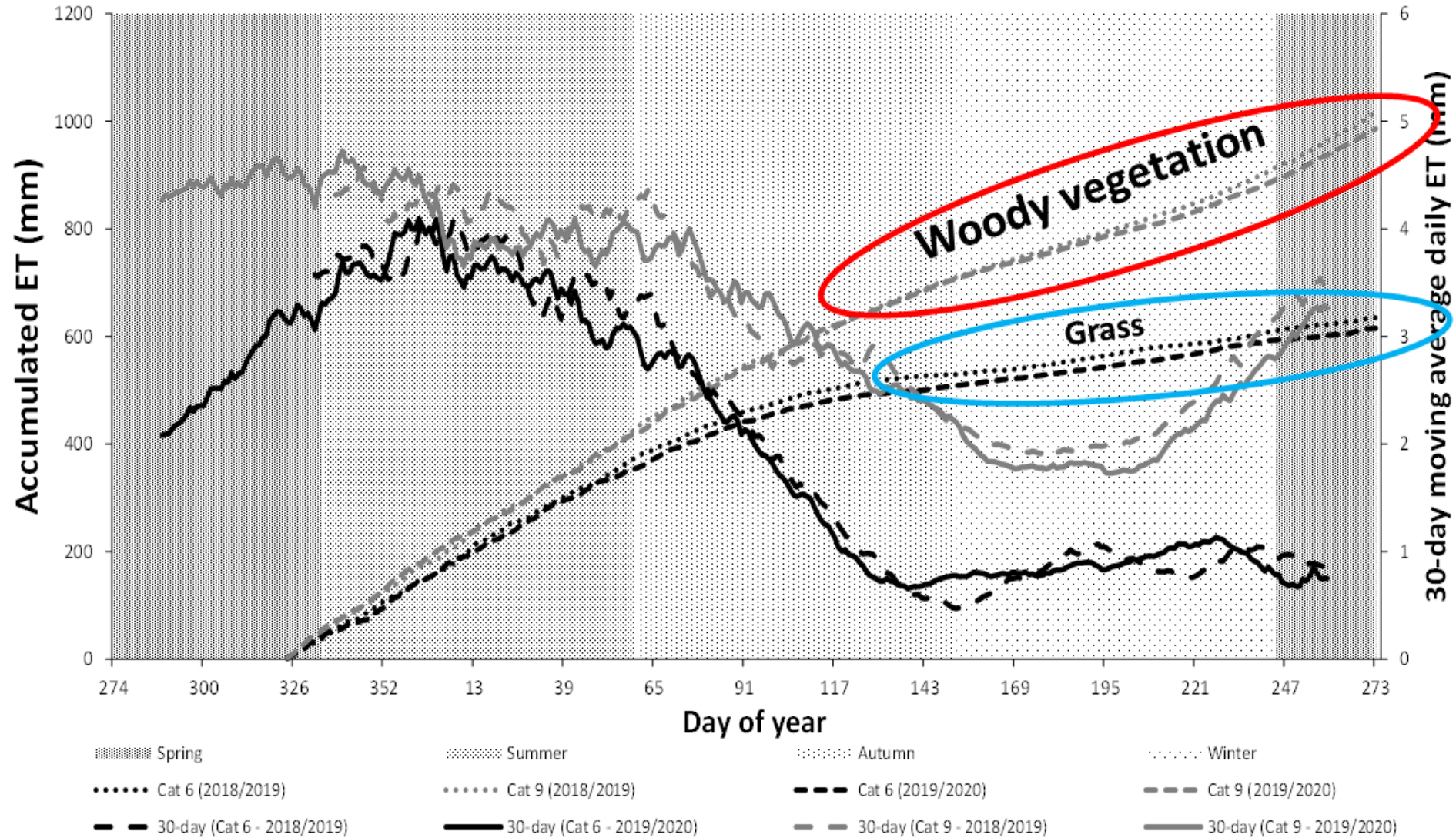



2017





Impacts of woody vegetation on water resources



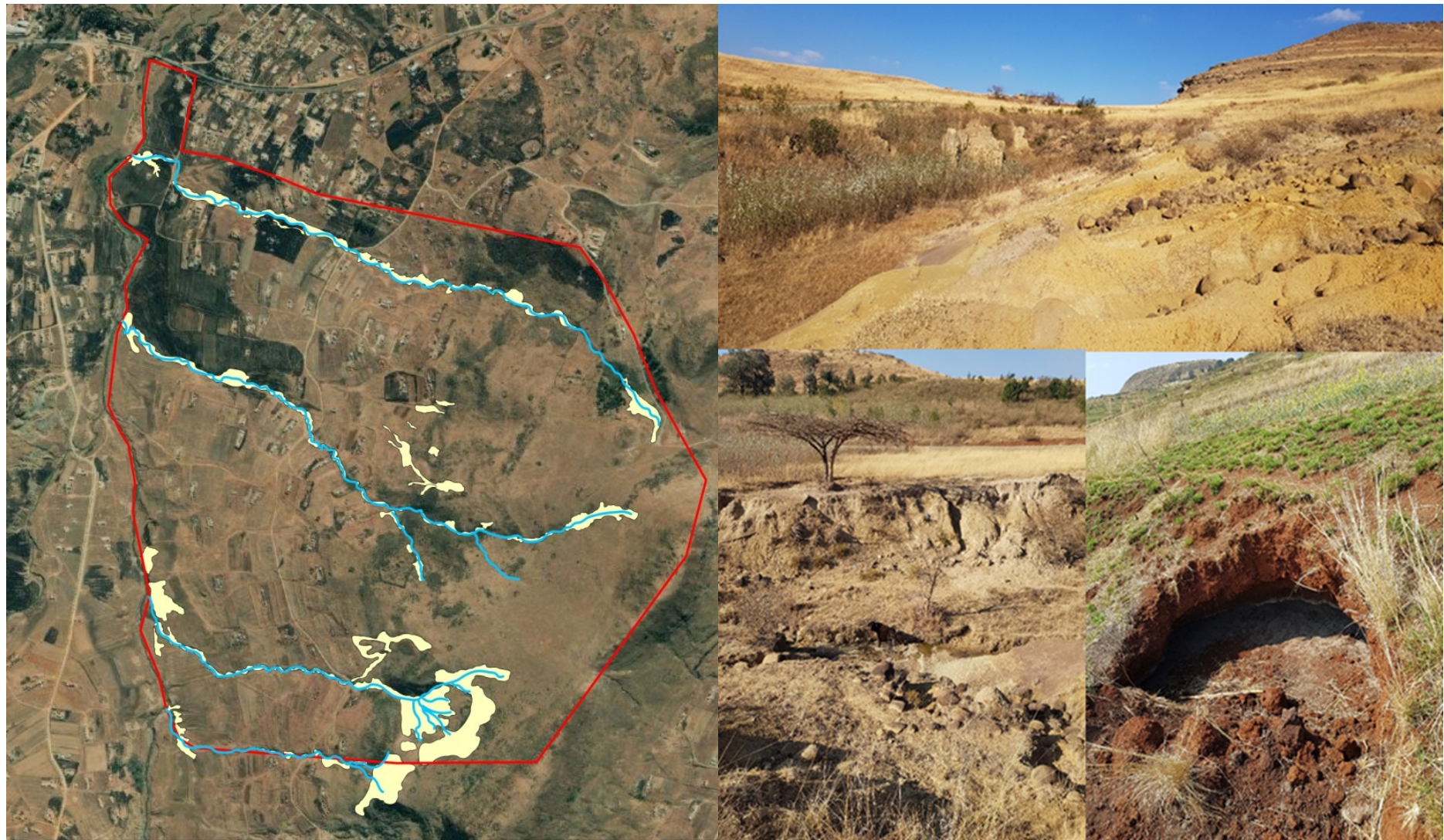





Ezibomvini Village

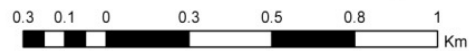
Maps

Veld Condition Assessment

Ukuguguleka komhlabathi- Erosion

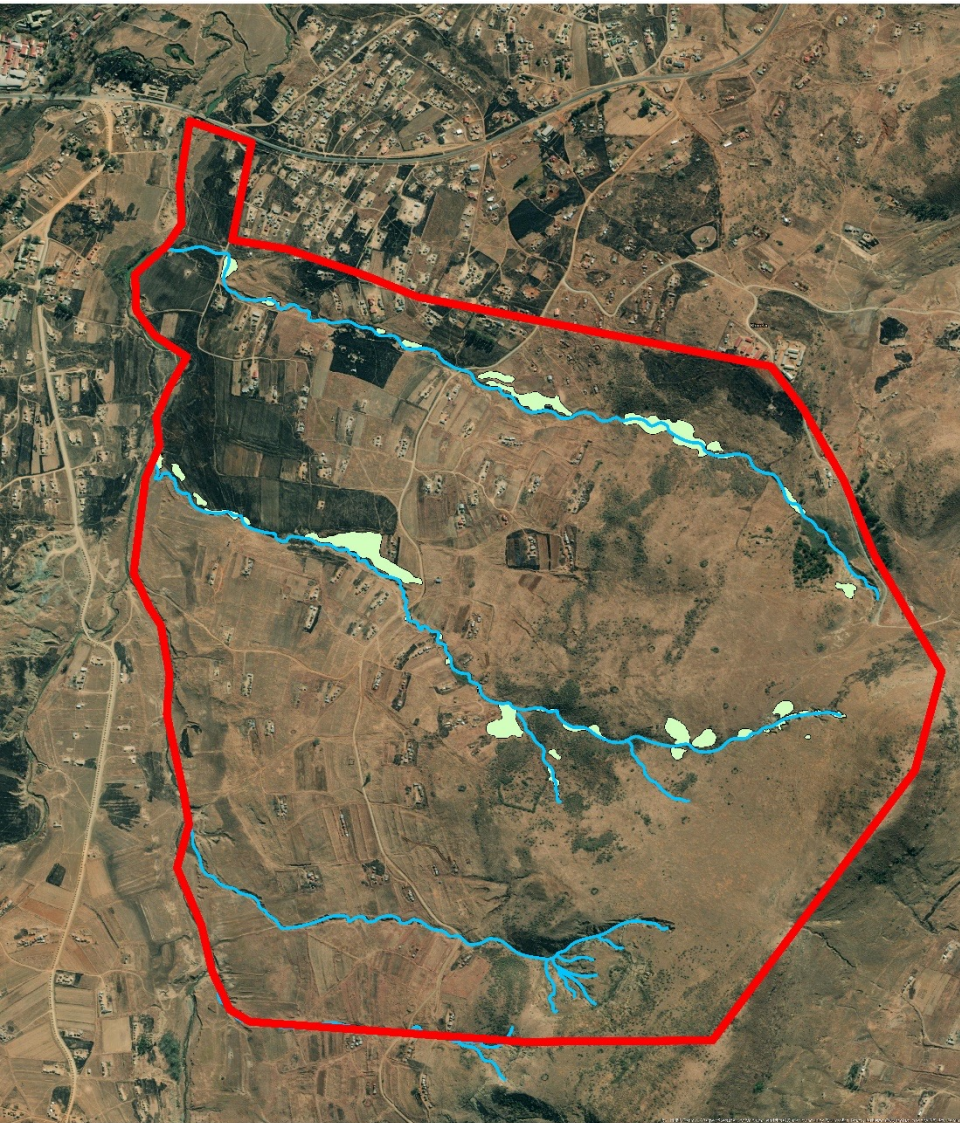


-  Erosion
-  Rivers
-  Boundary



Ikhona imibuzo noma imibona?
Feedback and Questions?

Amaxhaphozi- Wetland

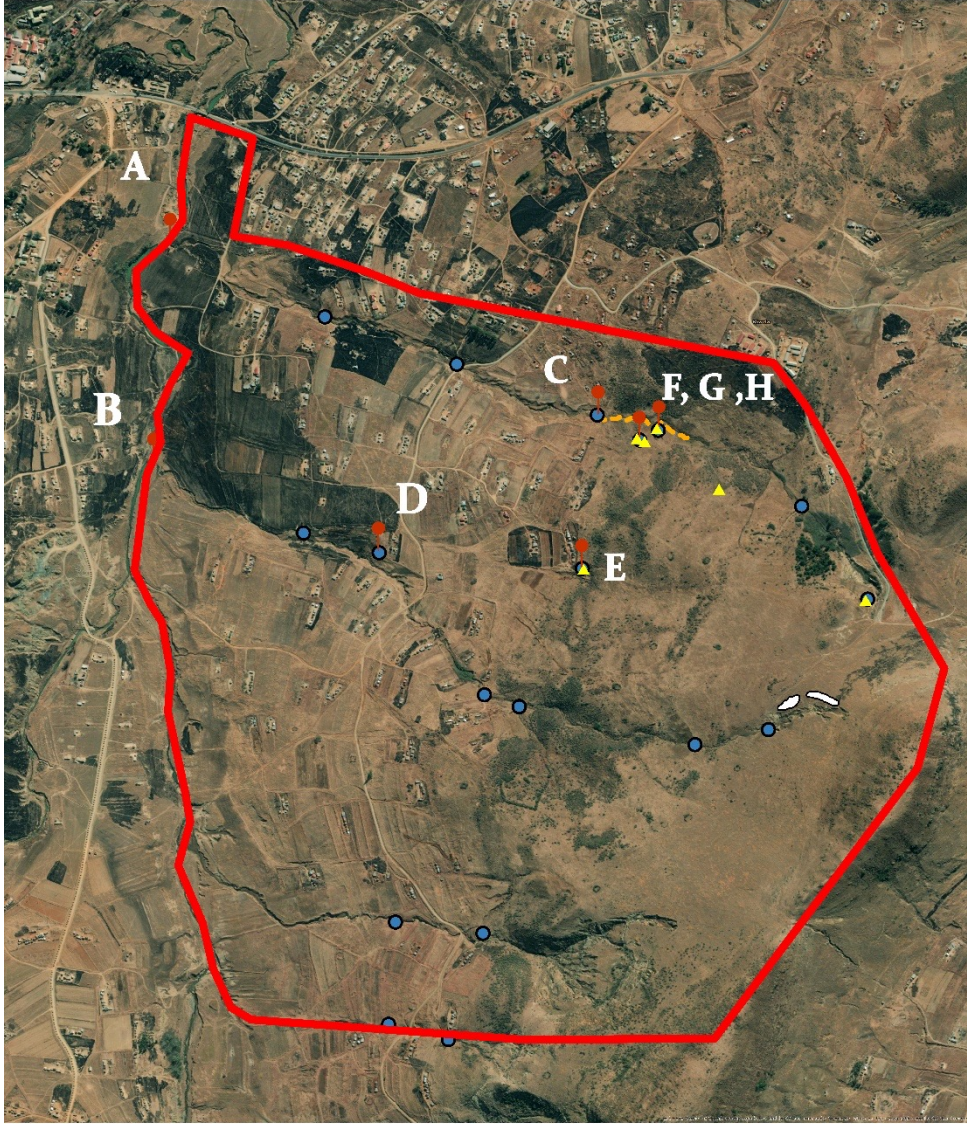


— Boundary
— Rivers
— Wetland

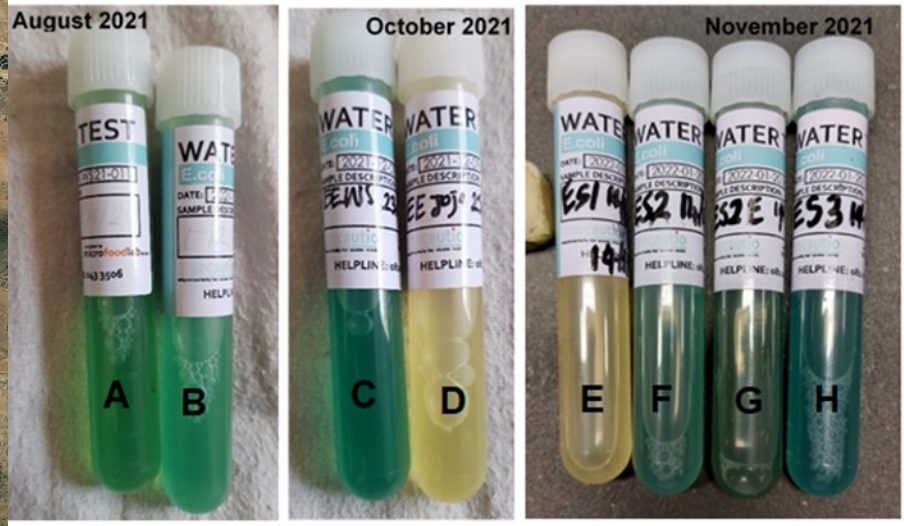


0.3 0.1 0 0.3 0.5 0.8 1 km

Ukusetshenziswa kwamanzi- Water uses

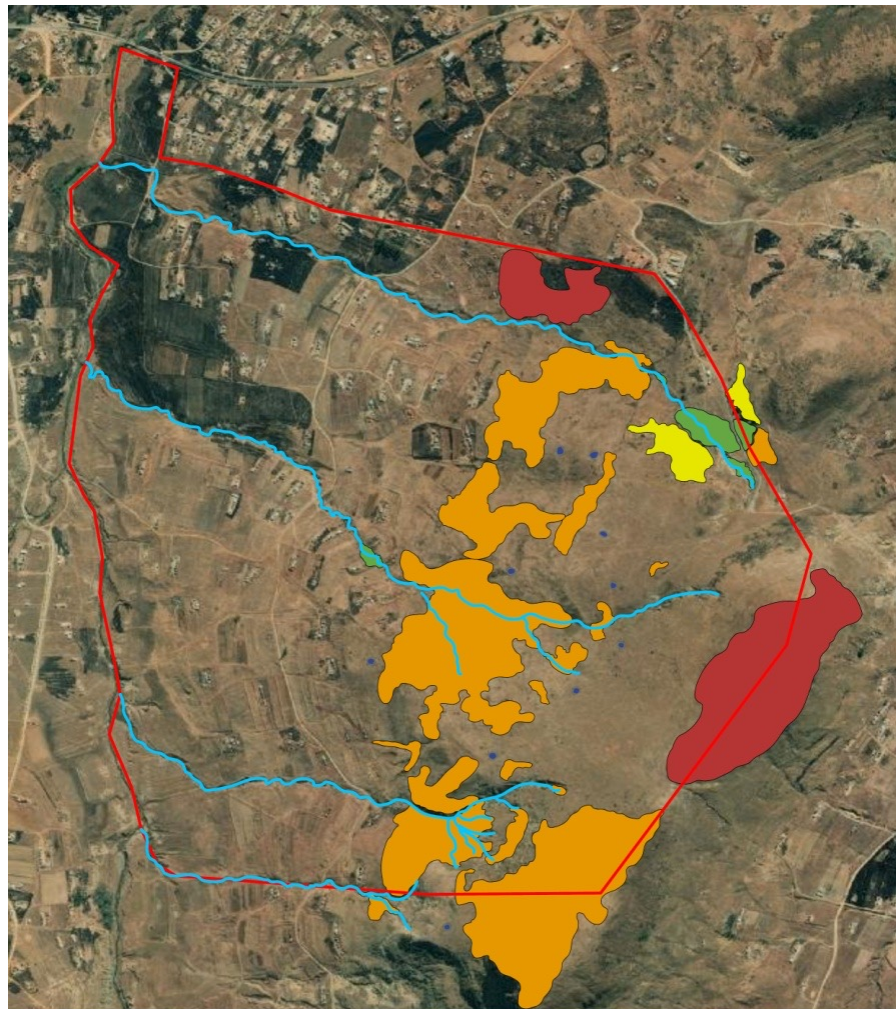


- Boundary
- Springs
- E.coli tests
- Water points
- Brick Making
- Washing Clothes

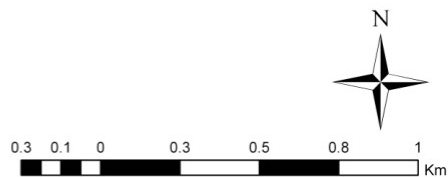


Ikhona imibuzo noma imibona?
Feedback and Questions ?

Izinhlobo ezahlukahlukene zotshani nezihlahla - Vegetation



- Populus alba
- Eucalyptus and Wattle
- Aloe community
- Lantana camara
- Rivers
- Boundary
- Old Homestead



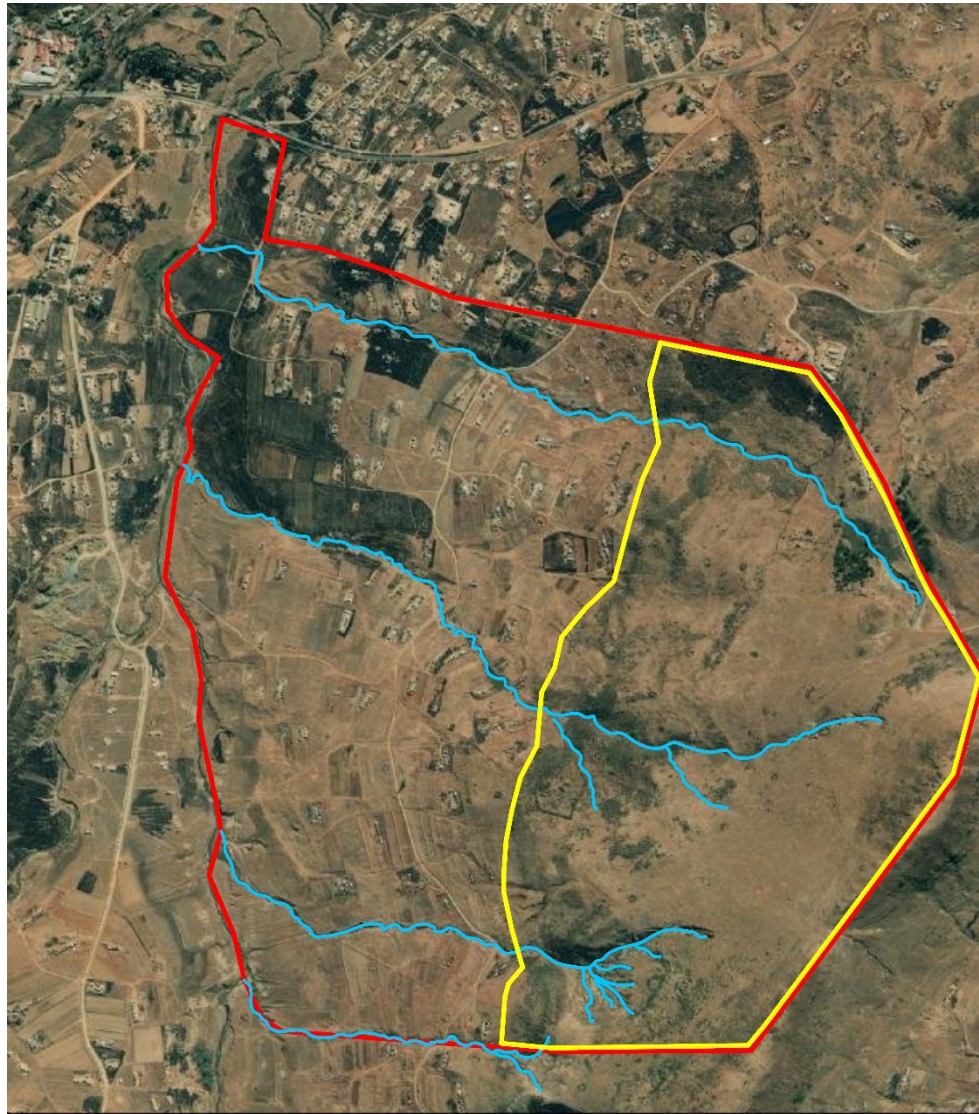
Ikhona imibuzo noma imibona?
Feedback and Questions ?

Veld Condition Assessment

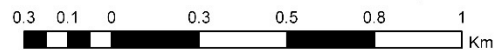
- Grass species diversity – 200 points
- Grass and Forb cover – 1 m quadrat
- Grass Biomass – Disc Pasture Meter



Grazing Land



- Rivers
- ▭ Boundary
- ▭ Grazing Area



Summary of the Veld Condition Assessment

Vegetation type	Open Grassland
Grass diversity	16 species
Palatable Grass %	<i>Themeda triandra</i> 2.5%
(High graving value)	<i>Digitaria tricholaenoides</i> 7%
	<i>Tristachya leucothrix</i> 4.5%
Dominant Grass Grazing value	<i>Paspalum notatum</i> - Average 50%
	<i>Sporobolus pyramidalis</i> - Low 13.5%
Grass cover	93%
Bare soil	4.5%
Grass Biomass	Low
Veld Score	Poor - Moderately degraded
Invaders	Lantana

Ikhona imibuzo noma imibona?
Feedback and Questions ?