



agriculture
& rural development

Department:
agriculture
& rural development
PROVINCE OF KWAZULU-NATAL

ARDM DROUGHT MONITOR MAPS SUMMARY MAY 2014 TO DECEMBER 2017

DIRECTORATE: ARM
COMPONENT: ARDM

TOGETHER WE HAVE MADE KZN A BETTER PROVINCE TO LIVE IN.



DROUGHT MONITOR INDICES

Drought Indicator Indices

Indicator (Weight)	Index	Description
SPI (12mnths) (0.2)	1	Slightly dry
	2	Somewhat dry
	3	Moderately dry
	4	Severely dry
	5	Extremely dry
Rainfall % of mean 12mnths period (0.05)	1	≥100 %
	2	≥ 75 %
	3	50 – 75 %
	4	25 – 50 %
	5	<25 %

Drought Indicator Indices

Indicator (Weight)	Index	Description
PASG 12mnths period (0.1)	1	Well above average conditions
	2	Above average conditions
	3	Average conditions
	4	Possible Drought conditions
	5	Drought conditions
Fire Danger levels (0.05)	1	≥ 20 days/month with Low fire danger
	2	≥ 20 days/month with Moderate fire danger
	3	≥ 10 days/month with High Fire danger
	4	≥ 10 days/month with V.High
	5	≥ 10 days/month with Extremely high fire danger

Drought Indicator Indices

Indicator (Weight)	Index	Description
SNDVI compared to long term ave. (0.01)	1	Green
	2	White
	3	Yellow
	4	Orange
	5	Red

Drought Indicator Indices

Indicator (Weight)	Index	Description
Restrictions (0.1)	1	Voluntary conservation (No mandatory restriction)
	2	Non Core Usage forbidden (Mandatory) & Penalties on consumption
	3	Carting/Tankering (out of Normal) of Water & placing Storage tanks
	4	Water shedding (Pressure adjustment & rationing to certain times) & Restriction of Irrigation
	5	Discontinuation of water reticulation (Piping) & delivering water to outlet points
Soil saturation Index (SSI) (0.1)	1	81-100%
	2	61-80%
	3	41-60%
	4	21-40%
	5	0-20%

Drought Indicator Indices

Indicator (Weight)	Index	Description
Evaporation Demand (0.04)	1	< 3 mm/day
	2	3.1 - 4 mm/day
	3	4.1 - 5 mm/day
	4	5.1 - 6 mm/day
	5	> 6.1 mm/day
Precipitation (0.05)	1	1 month below normal
	2	2 month cumulative below 65% of normal
	3	1 of the following criteria met: 3 month cum. < 65% or 6 month cum. < 70% or 12 month cum. < 70%
	4	1 of the following criteria met: 3 month cum. < 65% and 6 month cum. <65% or 6 month cum. <65% and 12 month cum. <65% or 3 month cum. <65% and 12 month cum. <65%
	5	Same criteria as Warning And Previous month was Warning or Emergency

Drought Indicator Indices

Indicator (Weight)	Index	Description
Stream flow (0.2)	1	1 month below normal
	2	At least 2 out of 3 consecutive months below normal
	3	At least 4 out of 5 consecutive months below normal
	4	At least 6 out of 7 consecutive months below normal
	5	>7 months below normal
Reservoir/Dam (0.1)	1	Reservoir levels at or near normal for the time of year
	2	Small index reservoirs below normal
	3	Medium index Reservoirs below normal
	4	Large index reservoirs below normal
	5	Continuation of previous month's conditions (Large index reservoirs below normal)

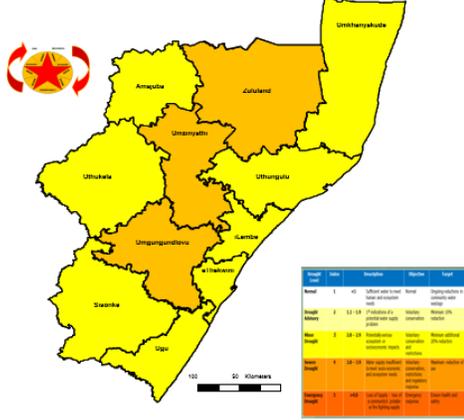
Calculating Drought Index

	Indices	Weight	Value	DIV (Weight X Value)
Meteorological	SPI	0.2		
	Rainfall	0.05		
	Precipitation	0.05		
Agricultural	SNDVI	0.01		
	PASG	0.1		
	FDI	0.05		
	Evaporation Demand	0.04		
Hydrological	Reservoirs/DAM	0.1		
	Stream flow	0.2		
	Groundwater	0.1		
	Municipal Water	0.1		
	Restrictions			
Sum of DIV's				

Drought Level	Index	Description	Objective	Target
Normal	1	<1 Sufficient water to meet human and ecosystem needs	Normal	Ongoing reductions in community water wastage
Drought Advisory	2	1.1 – 1.9 1 st indications of a potential water supply problem	Voluntary conservation	Minimum 10% reduction
Minor Drought	3	2.0 – 2.9 Potentially serious ecosystem or socioeconomic impacts	Voluntary conservation and restrictions	Minimum additional 20% reduction
Severe Drought	4	3.0 – 3.9 Water supply insufficient to meet socio-economic and ecosystem needs	Voluntary conservation, restrictions and regulatory response	Maximum reduction of use
Emergency Drought	5	>4.0 Loss of Supply - loss of a community's potable or fire fighting supply	Emergency response	Ensure health and safety

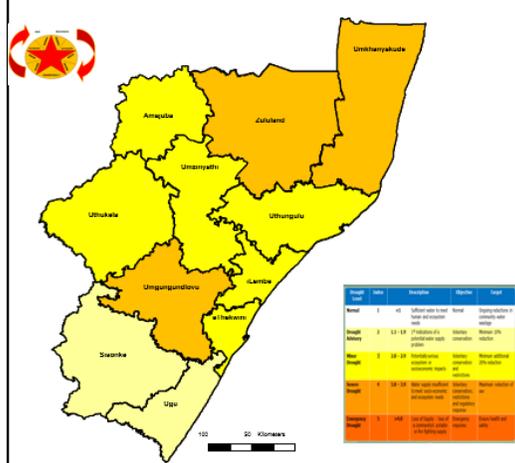
DROUGHT LEVEL IN KZN

September 2017



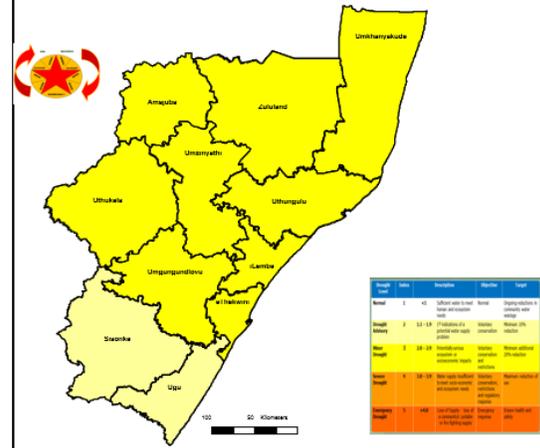
DROUGHT LEVEL IN KZN

October 2017



DROUGHT LEVEL IN KZN

November 2017



DROUGHT LEVEL IN KZN

December 2017

