Supplementary Material

Table S1: Rainfall Anomaly Index (RAI) classification thresholds.

RAI Range	Class
≥ 3.00	Extremely wet
2.00 – 2.99	Very wet
1.00 – 1.99	Moderately wet
0.50 – 0.99	Slightly wet
−0.49 – 0.49	Near-normal
−0.50 – −0.99	Slightly dry
−1.00 – −1.99	Moderately dry
−2.00 – −2.99	Very dry
≤ −3.00	Extremely dry

Table S2: Normalized Difference Vegetation Index (NDVI) classification thresholds.

SPI Range	Class
≥ 2.00	Extremely wet
1.50 – 1.99	Very wet
1.00 – 1.49	Moderately wet
−0.99 – 0.99	Near-normal
−1.49 – −1.00	Moderately dry
−1.99 – −1.50	Very dry
≤ −2.00	Extremely dry

Table S3: Rainfall Anomaly Index (RAI) positive anomalies across stations in the Waterberg Mountain Complex (WMC), 1996-2023.

Station	Polarity	Class	Year	RAI
Lephalale	Positive	Extremely wet	1996	4,31
Lephalale	Positive	Extremely wet	2014	3,14
Lephalale	Positive	Extremely wet	2021	4,56
Lephalale	Positive	Extremely wet	2022	4,55
Lephalale	Positive	Moderately wet	2000	1,97
Lephalale	Positive	Moderately wet	2007	1,02
Lephalale	Positive	Moderately wet	2009	1,98
Lephalale	Positive	Near-normal	1998	0,33
Lephalale	Positive	Near-normal	2010	-0,02
Lephalale	Positive	Slightly wet	2001	0,98
Lephalale	Positive	Slightly wet	2006	0,69
Lephalale	Positive	Slightly wet	2020	0,98
Lephalale	Positive	Very wet	1997	2,14
Lephalale	Positive	Very wet	2004	2,81
Lephalale	Positive	Very wet	2008	2,35
Lephalale	Positive	Very wet	2012	2,2
Marken	Positive	Extremely wet	1996	7,11
Marken	Positive	Extremely wet	2000	3,05
Marken	Positive	Extremely wet	2002	3,77
Marken	Positive	Extremely wet	2005	5,07

Marken	Positive	Extremely wet	2006	4,81
Marken	Positive	Extremely wet	2007	3,96
Marken	Positive	Extremely wet	2020	5,14
Marken	Positive	Moderately wet	1998	1,78
Marken	Positive	Moderately wet	2016	1,23
Marken	Positive	Slightly wet	2010	0,69
Marken	Positive	Slightly wet	2014	0,86
Marken	Positive	Very wet	1999	2,09
Marken	Positive	Very wet	2004	2,34
Marken	Positive	Very wet	2008	2,02
Marken	Positive	Very wet	2012	2,18
Marken	Positive	Very wet	2018	2,35
Marken	Positive	Very wet	2022	2,59
Mokopane	Positive	Extremely wet	1996	6,52
Mokopane	Positive	Extremely wet	2020	3,04
Mokopane	Positive	Extremely wet	2021	4,61
Mokopane	Positive	Extremely wet	2022	3,67
Mokopane	Positive	Moderately wet	2006	1,46
Mokopane	Positive	Moderately wet	2009	1,16
Mokopane	Positive	Near-normal	1997	-0,24
Mokopane	Positive	Near-normal	2016	-0,23
Mokopane	Positive	Slightly wet	1998	0,58
Mokopane	Positive	Slightly wet	2012	0,69
Mokopane	Positive	Slightly wet	2013	0,56
Mokopane	Positive	Slightly wet	2015	0,9
Mokopane	Positive	Slightly wet	2018	0,61
Mokopane	Positive	Very wet	2010	2,28
Mokopane	Positive	Very wet	2019	2,31
Mokopane	Positive	Very wet	2023	2,84
Thabazimbi	Positive	Extremely wet	1996	5,49
Thabazimbi	Positive	Extremely wet	1998	3,47
Thabazimbi	Positive	Extremely wet	2000	4,83
Thabazimbi	Positive	Extremely wet	2006	3,15
Thabazimbi	Positive	Extremely wet	2021	5
Thabazimbi	Positive	Moderately wet	2004	1,44
Thabazimbi	Positive	Moderately wet	2008	1,98
Thabazimbi	Positive	Near-normal	2011	-0,03
Thabazimbi	Positive	Near-normal	2019	-0,14
Thabazimbi	Positive	Slightly wet	2010	0,77
Thabazimbi	Positive	Slightly wet	2014	0,72
Thabazimbi	Positive	Slightly wet	2016	0,76
Thabazimbi	Positive	Slightly wet	2018	0,54
Thabazimbi	Positive	Very wet	1997	2,72
Thabazimbi	Positive	Very wet	1999	2,15
Thabazimbi	Positive	Very wet	2005	2,48
Thabazimbi	Positive	Very wet	2012	2,06

Thabazimbi	Positive	Very wet	2019	2,26
Thabazimbi	Positive	Very wet	2020	2,5
Thabazimbi	Positive	Very wet	2022	2,3
Warmbath	Positive	Extremely wet	1996	4,37
Warmbath	Positive	Extremely wet	1998	3,65
Warmbath	Positive	Extremely wet	2000	5,58
Warmbath	Positive	Extremely wet	2005	4,11
Warmbath	Positive	Extremely wet	2019	3,19
Warmbath	Positive	Moderately wet	2004	1,49
Warmbath	Positive	Moderately wet	2016	1,48
Warmbath	Positive	Moderately wet	2018	1,61
Warmbath	Positive	Near-normal	2001	0,33
Warmbath	Positive	Near-normal	2021	-0,17
Warmbath	Positive	Slightly wet	2002	0,74
Warmbath	Positive	Slightly wet	2009	0,91
Warmbath	Positive	Slightly wet	2015	0,79
Warmbath	Positive	Slightly wet	2022	0,98
Warmbath	Positive	Slightly wet	2023	0,85
Warmbath	Positive	Very wet	1997	2,67
Warmbath	Positive	Very wet	2006	2,12
Warmbath	Positive	Very wet	2008	2,08
Warmbath	Positive	Very wet	2010	2,01
Warmbath	Positive	Very wet	2012	2,25
Warmbath	Positive	Very wet	2014	2,06

Table S4: Rainfall Anomaly Index (RAI) negative anomalies across stations in the Waterberg Mountain Complex (WMC), 1996-2023.

Station	Polarity	Class	Year	RAI
Lephalale	Negative	Extremely dry	1999	-5,33
Lephalale	Negative	Extremely dry	2003	-4,35
Lephalale	Negative	Extremely dry	2005	-3,83
Lephalale	Negative	Extremely dry	2019	-3,33
Lephalale	Negative	Extremely dry	2023	-5,33
Lephalale	Negative	Moderately dry	2016	-1,53
Lephalale	Negative	Moderately dry	2017	-1,38
Lephalale	Negative	Moderately dry	2018	-1,64
Lephalale	Negative	Slightly dry	2011	-0,64
Lephalale	Negative	Slightly dry	2013	-0,67
Lephalale	Negative	Very dry	2002	-2,13
Lephalale	Negative	Very dry	2015	-2,57
Marken	Negative	Extremely dry	2003	-4,78
Marken	Negative	Extremely dry	2005	-3,28
Marken	Negative	Extremely dry	2015	-3,03
Marken	Negative	Extremely dry	2020	-4,88
Marken	Negative	Moderately dry	1997	-1,89

Marken	Negative	Moderately dry	2007	-1,81
Marken	Negative	Very dry	2001	-2,36
Marken	Negative	Very dry	2002	-2,03
Marken	Negative	Very dry	2011	-2,71
Marken	Negative	Very dry	2012	-2,29
Marken	Negative	Very dry	2019	-2,75
Mokopane	Negative	Extremely dry	1999	-3,7
Mokopane	Negative	Extremely dry	2002	-3,89
Mokopane	Negative	Extremely dry	2004	-4,36
Mokopane	Negative	Extremely dry	2008	-3,05
Mokopane	Negative	Moderately dry	2001	-1,07
Mokopane	Negative	Moderately dry	2014	-1,62
Mokopane	Negative	Very dry	2000	-2,68
Mokopane	Negative	Very dry	2003	-2,72
Mokopane	Negative	Very dry	2005	-2,22
Mokopane	Negative	Very dry	2007	-2,06
Mokopane	Negative	Very dry	2011	-2,3
Mokopane	Negative	Very dry	2017	-2,02
Thabazimbi	Negative	Extremely dry	2003	-4,52
Thabazimbi	Negative	Extremely dry	2005	-3,11
Thabazimbi	Negative	Extremely dry	2015	-3,28
Thabazimbi	Negative	Extremely dry	2020	-4,78
Thabazimbi	Negative	Moderately dry	1997	-1,41
Thabazimbi	Negative	Moderately dry	2007	-1,27
Thabazimbi	Negative	Very dry	2001	-2,54
Thabazimbi	Negative	Very dry	2002	-2,12
Thabazimbi	Negative	Very dry	2011	-2,66
Thabazimbi	Negative	Very dry	2012	-2,29
Thabazimbi	Negative	Very dry	2019	-2,59
Warmbath	Negative	Extremely dry	2003	-4,78
Warmbath	Negative	Extremely dry	2005	-3,28
Warmbath	Negative	Extremely dry	2015	-3,03
Warmbath	Negative	Extremely dry	2020	-4,88
Warmbath	Negative	Moderately dry	1999	-1,89
Warmbath	Negative	Moderately dry	2007	-1,81
Warmbath	Negative	Very dry	2001	-2,36
Warmbath	Negative	Very dry	2002	-2,03
Warmbath	Negative	Very dry	2011	-2,71
Warmbath	Negative	Very dry	2012	-2,29
Warmbath	Negative	Very dry	2019	-2,75