Table S3. Runoff efficiency calculated using observed runoff data and GPCC precipitation data.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| A | B | C | D | E | = (E / B) × 100 |
|  | **model using GPCC dataset** |  | **GRDC catalogue** | **GRDC catalogue** |  |
| **catchment**  **code** | **mean rainfall**  **(mm y-1)** | **temporal range (years)** | **station reference** | **mean annual runoff depth (mm y-1)** | **runoff efficiency (%)** |
| zade | 357.4 | 1982-2020 (even) | 1159305 | 1.6 | 0.5% |
| zat | 515.3 | 1982-2020 (even) | 1159400 | 3.3 | 0.6% |
| ault | 355.2 | 1982-2020 (even) | 5606097 | 2.4 | 0.7% |
| aufr | 433.3 | 1982-2020 (even) | 5607080 | 6.8 | 1.6% |
| zabt | 503.9 | 1982-2020 (even) | 1160530 | 8.9 | 1.8% |
| zakk | 550.7 | 1982-2020 (even) | 1160120 | 11.2 | 2.0% |
| zadk | 408.1 | 1982-2020 (even) | 1160527 | 13.6 | 3.3% |
| usnp | 415.2 | 1982-2020 (even) | 4151514 | 16.7 | 4.0% |
| brpr | 801.2 | 1982-2020 (even) | 3650620 | 33.2 | 4.1% |
| zao | 692.3 | 1982-2020 (even) | 1160660 | 34.1 | 4.9% |
| zahh | 228.7 | 1982-2020 (even) | 1159110 | 11.7 | 5.1% |
| aumf | 670.6 | 1982-2020 (even) | 5606042 | 35.0 | 5.2% |
| brmn | 722.6 | 1982-2020 (even) | 3650634 | 41.3 | 5.7% |
| zahe | 513.1 | 1982-2020 (even) | 1196300 | 30.0 | 5.9% |
| ausj | 636.9 | 1982-2020 (even) | 5606040 | 41.4 | 6.5% |
| zamb | 551.4 | 1982-2020 (even) | 1160250 | 39.2 | 7.1% |
| aunp | 362.9 | 1982-2020 (even) | 5607520 | 31.5 | 8.7% |
| zaul | 816.7 | 1982-2020 (even) | 1160704 | 73.1 | 8.9% |
| zaos | 614.9 | 1982-2020 (even) | 1196561 | 57.3 | 9.3% |
| zaw | 852.2 | 1982-2020 (even) | 1197505 | 80.6 | 9.5% |
| augd | 472.8 | 1982-2020 (even) | 5109110 | 51.5 | 10.9% |
| aums | 709.6 | 1982-2020 (even) | 5109175 | 90.1 | 12.7% |
| zaan | 741.7 | 1982-2020 (even) | 1159650 | 119.5 | 16.1% |
| zamk | 605.1 | 1982-2020 (even) | 1196570 | 111.1 | 18.4% |
| usmh | 465.3 | 1982-2020 (even) | 4213250 | 103.8 | 22.3% |
| zasd | 480.3 | 1982-2020 (even) | 1160305 | 111.2 | 23.1% |
| ussc | 383.0 | 1982-2020 (even) | 4115220 | 130.7 | 34.1% |
| ilob | 624.8 | 1982-2020 (even) | 6594050 | 296.3 | 47.4% |