Precipitation Fact Sheet

# Queen Elizabeth National Park

- The area around Queen Elizabeth National Park (QENP) has two pronounced rainy seasons, due to its location on the equator and the annual migration of the Intertropical Convergence Zone (ITCZ).
- The onset of the first rains is typically around late February for all four stations. The onset of the second rains is typically around mid-August.
- There is no significant difference in the duration of the two rainy seasons at any station.
- There is no significant difference in the amount of rainfall received during the two rainy seasons at any station, except for at Kitwe, where more rainfall occurs during the second rains than during the first rains.

Table 1a. Precipitation estimates and timing of the first rainy season, from harmonic analysis of monthly data.

| Station | Period | Prec. (mm) | Onset 1 (days) | Cessation 1 (days) |
|---|---|---|---|---|
| Kitwe | 1940-1975 | 1316.9 ± 392 | 24-Feb ± 29 | 7-May ± 26 |
| Bunyaguru | 1940-1975 | 1055.7 ± 257 | 26-Feb ± 25 | 10-May ± 26 |
| Kasese | 1972-1992 | 866.0 ± 122 | 28-Feb ± 28 | 14-May ± 39 |
| Mweya | 1979-2011 | 1298.1 ± 216 | 28-Feb ± 23 | 27-Apr ± 26 |

Table 1b. Precipitation estimates and timing of the second rainy season, from harmonic analysis of monthly data.

| Station | Onset 2 (days) | Cessation 2 (days) |
|---|---|---|
| Kitwe | 14-Aug ± 33 | 7-Nov ± 28 |
| Bunyaguru | 16-Aug ± 35 | 5-Nov ± 23 |
| Kasese | 14-Aug ± 24 | 4-Nov ± 31 |
| Mweya | 1-Sep ± 31 | 3-Nov ± 15 |

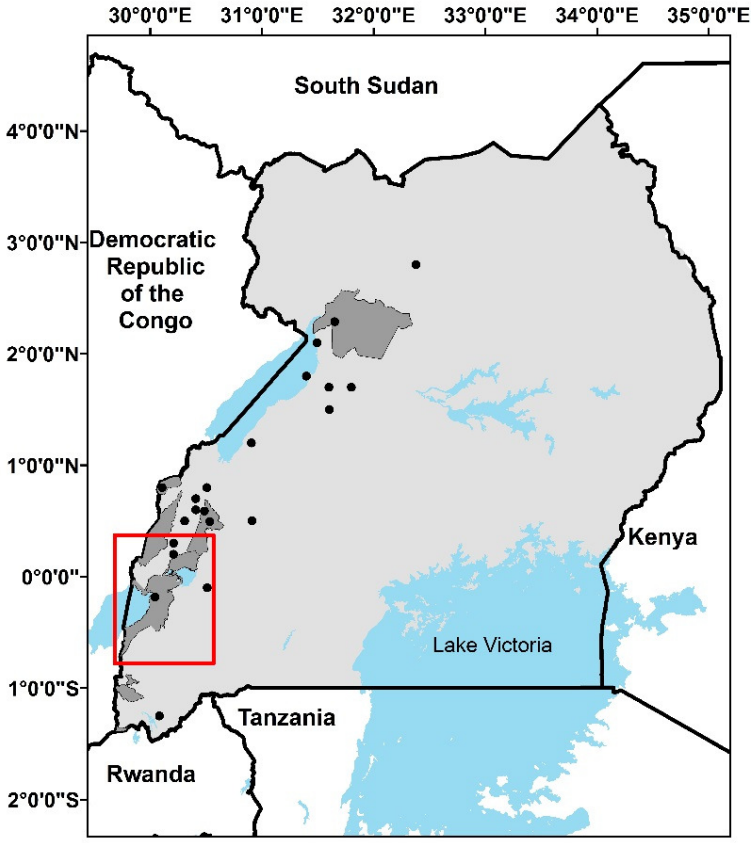


Figure 1. Map of Uganda with rainfall stations (dots) and the area around Queen Elizabeth National Park highlighted by the red box.

Montly rainfall records obtained from the following stations:

- Kitwe (30.4°E, 0.1°S, 1940-1975)
- Bunyaguru (30.10°E, 0.3°N, 1940-1975)
- Kasese (30.1°E, 0.2°N, 1972-1992)
- Mweya (29.9°E, 0.2°S, 1979-2011)

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There do not appear to be any significant trends over time in annual precipitation at any of the stations (Figure 3). One of the main concerns with climate change in this region is that the variability in annual precipitation or the timing of the rainy season will change over time. Rainfall records are not long enough or complete enough to show any changes in variability in recent times for the area around Queen Elizabeth National Park.

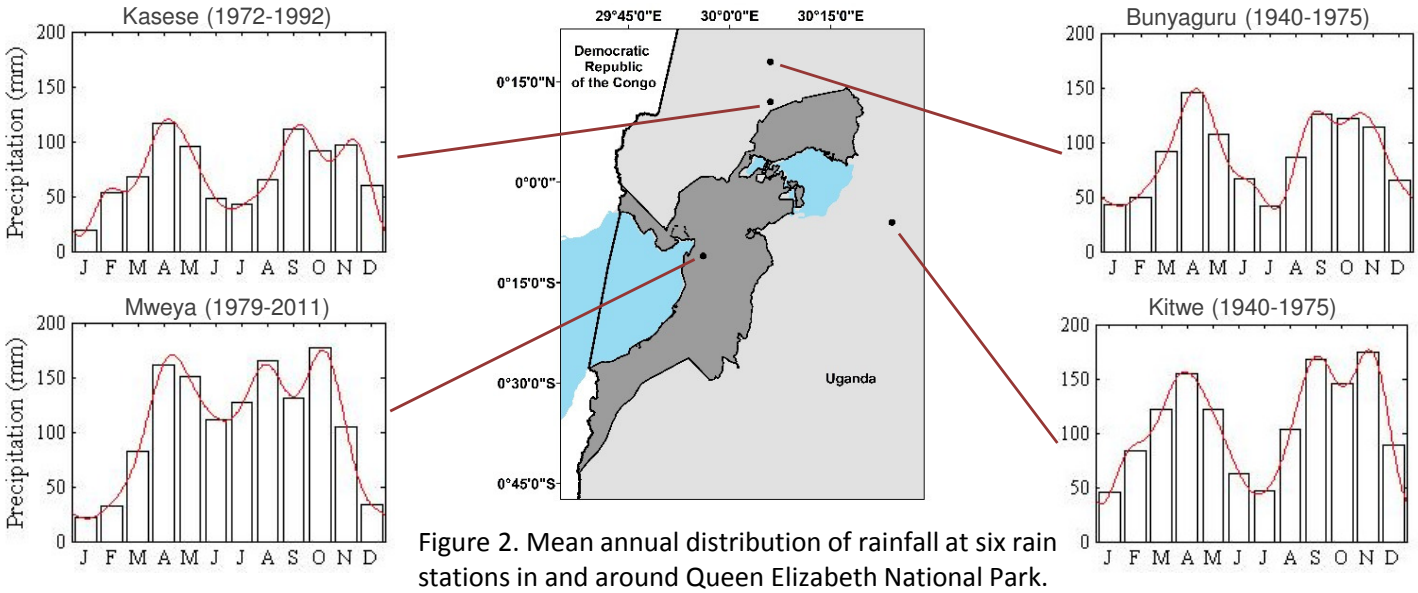


Figure 2. Mean annual distribution of rainfall at six rain stations in and around Queen Elizabeth National Park.

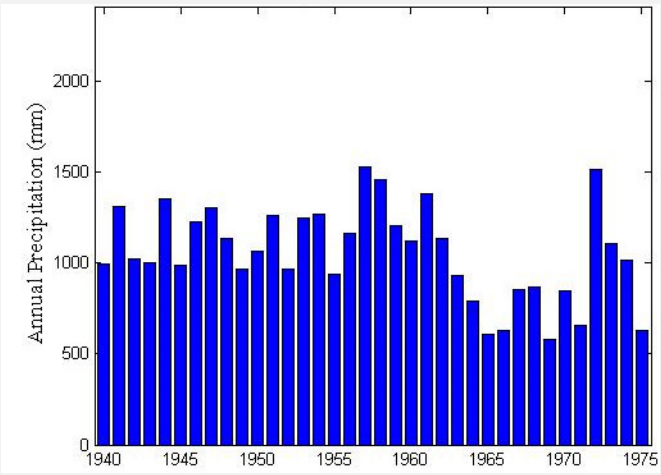


Figure 3a. Mean monthly precipitation at Bunyaguru station.

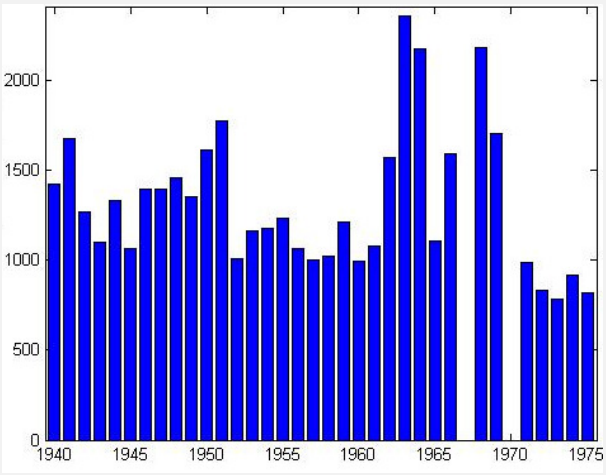


Figure 3b. Annual precipitation over time at Kitwe station.

## PECAR: People, Environment, and Climate in the Albertine Rift

Principal Investigators: Joel Hartter, Jeremy Diem, Sadie Ryan, Colin Chapman.

Acknowledgements: This precipitation data was recorded by countless people in Uganda, and was collected and organized by Dr. Joel Hartter of the University of New Hampshire and Dr. Jeremy Diem of Georgia State University.

Funding: National Science Foundation Coupled Natural Human Systems grant, National Geographic Society Research and Exploration Grant, Canada Research Chair, University of New Hampshire.

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