

However, even in the hyper-arid desert on the west coast, where it often does not rain for several years in succession, water is not the limiting factor; the only areas where frogs do not occur in Namibia are the sand seas of the northern and southern-central Namib Desert, and here the windblown sand dune substrate appears to be the limiting factor. Standing water is rare, but moisture is abundant due to the Benguella current-induced fogs (Olivier 1992). The Desert Rain Frog (*Breviceps macrops*) occurs in sandy habitats (but not wind-active high dunes) throughout the extreme southern Namib, but appears to be limited by high dunes and the winter rainfall regime. Thus far none have been found north of Lüderitz, in the predominantly summer rainfall dune area. This species, like others in the genus, is not dependent on free water to complete the breeding cycle.

Due to unpredictable rainfall, frogs in arid areas have developed strategies for breeding (Channing 1976) and species normally associated with permanent water sources have successfully colonized ephemeral wetlands (Dudley 1978; Loveridge 1976).

Besides the Namib sand seas, the lowest species diversity is in the Kalahari-Karoo region. This is probably due to a combination of lack of habitat variety and permanent wetlands, with a very high evaporation rate, exceeding 3800 mm per year in some places (Anon 1988).

Perennial rivers act as linear oases, by introducing uncharacteristic habitat into otherwise dry areas. In this way rivers act as conduits for species dispersion. The frog faunas of the Caprivi for example are a subset of frog faunas further upstream in Angola and Zambia.

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