

Hippos in search of the last suitable water pools

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Congregation of hippos in one of the last suitable pools during the end of the dry season in Ruaha National Park (Tanzania). Credit: Claudia Stommel/IZW

Hippos in the Great Ruaha River in Tanzania face a profound loss of their habitat during the dry season. The river has much less water during this season than in previous decades because it is increasingly extracted for human use. As a consequence, the river dries up. Researchers from the German Leibniz Institute for Zoo and Wildlife Research (IZW) have now examined how this affects the distribution of hippos. Their results reveal extensive and long distance movements, as hippos search for vital daytime resting sites. The study has been published in the scientific journal *PLOS ONE*.

IZW scientists found that [hippos](#) move upstream over long distances as the river dries up in the [dry season](#). This forces them to congregate in large numbers in the few remaining areas along the river containing water of suitable volume and depth. "As a result, the hippos are likely to experience higher stress levels, because they have to move longer during daylight hours to find daytime resting sites. The potential for aggression and the competition for food also increase in such large aggregations", explains Claudia Stommel, PhD student at the IZW and first author of the study.

The common hippopotamus (*Hippopotamus amphibius*) is one of the largest African mammals and lives in aquatic habitats, such as river basins and lake districts. Since 2006 it is officially categorised as vulnerable on the "Red List" by the International Union for the Conservation of Nature (IUCN). Hippos must remain submerged in water during the day to prevent overheating and severe sunburn. One of the main threats to these animals is therefore habitat loss caused by human activities. Thus, the hippo is an excellent species to ask what consequences changes in water availability in natural water courses have for wildlife populations.

The scientists observed hippos in the Ruaha National Park in Tanzania. The region of the park is part of one of the largest protected natural

ecosystems in Africa. The Great Ruaha River represents the south eastern border of the national park and is the main source of water for wildlife during the dry season. The researchers conducted their study along a 104 km stretch of the river during the 2012 and 2013 dry seasons from June to November. The dry season water-flow of the formally perennial Great Ruaha River has been decreasing severely since 1993. "In many sections of the river, surface water was absent for months during the dry season", says Marion East, IZW scientist and leader of the study. These observations confirm that the river dries up in many locations, a phenomenon most likely linked to the extraction of water for agricultural production, e. g. rice growing, upstream of Ruaha National Park.

"Our findings highlight the vital importance of the Great Ruaha River in providing day-resting sites for the hippos within the Ruaha National Park", Stommel emphasises. The population in the [national park](#) is a very important hippo population in Africa. Any further decline in dry season surface water is likely to threaten the population in the long-term and may also affect other [water](#)-dependent species in Ruaha National Park. Further investigation is required to examine the resilience of the hippo population to habitat changes. The current findings provide a first basis for future studies and the design of species conservation measures.

More information: Claudia Stommel et al. The Effect of Reduced Water Availability in the Great Ruaha River on the Vulnerable Common Hippopotamus in the Ruaha National Park, Tanzania, *PLOS ONE* (2016). [DOI: 10.1371/journal.pone.0157145](https://doi.org/10.1371/journal.pone.0157145)

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