

The revised database includes a total of 167 data sources (speciesmonitoring.org/data-sources.html). We also updated the list of 29 reports published regularly to synthesize global data. We briefly describe each data source (50 relevant for monitoring biodiversity states, 48 for pressures, 34 for responses and 35 with multiple uses), identify the lead organization, and provide a link to the website. We flag the 88% of data sources that make at least some data or data products freely accessible, although some have additional restrictions for commercial use. We encourage data source managers to send us any additional information or updates to help improve subsequent versions.

This is the only initiative we are aware of that summarizes the known global biodiversity data sources. We hope it will be communicated and shared widely in relevant scientific, conservation and business communities, to help data users find the information they need to enhance biodiversity monitoring for conservation.

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Thousands of pastoralists seek refuge in Waza National Park, Cameroon

In December 2021, a decades-long conflict between Musgum fishers and Shuwa Arab pastoralists escalated at the Logone floodplain in Cameroon, resulting in 112 villages burned, 66 deaths, and 100,000 displaced people (news.un.org/en/story/2021/12/1108242). What has not been reported is that 2,500 pastoralists, with an estimated 35,000 cattle, sought refuge in Waza National Park, on the west of the floodplain. The incursion of cattle into conservation areas has become common in Central Africa (Scholte et al., 2021, *Conservation Biology*, doi.org/10.1111/cobi.13860). But this is the first time the inhospitable Waza National Park has served as a refuge for pastoralists and their families. To assess the situation, one of us visited the Park during 29–31 December 2021.

Waza National Park, a UNESCO Biosphere Reserve in the Sahelian savannah of Cameroon, has large populations of savannah elephants *Loxodonta africana*, kob *Kobus kob* and topi *Damaliscus korrigum* antelopes, and lions *Panthera leo*, and exceptional birdlife. It was the most visited park in Central Africa until the 2000s, but tourism ended abruptly when a visiting French family was kidnapped by Boko Haram in 2013. It marked the beginning of a long period of insecurity from which the Park has not

recovered: tourists have not returned, funding has diminished and wildlife has declined sharply.

Our investigation found that at the height of the clashes between fishers and pastoralists on 9 December, Shuwa Arab elders consulted each other and contacted Park guards by phone before deciding to enter the Park. The following day, Shuwa Arab men, women and children walked 20 km to the centre of the Park, continuing 2 days later to a nearby water-hole. There they were initially summoned by the Park warden to leave the Park but allowed to stay to recover from their journey. After 1 week, pastoralists continued through the inundated part of the Park to the north-east where they stayed until 20 January, when all but two of the 17 groups left the Park. The Park offered safety for the pastoralists, but the conditions were harsh for families and livestock, resulting in considerable loss of sheep and donkeys; three cattle were predated by lions.

Apart from some disturbance—only six kob antelopes were seen during the 3-day visit—we expect that the direct impact of pastoralists on the Park's wildlife was minor. By offering refuge in time of distress, the Park may have laid the foundation for future partnerships with pastoralists. The ecological and hydrological interdependence of Waza National Park and the Logone floodplain is recognized in the nomination of Waza–Logone as a Ramsar Site (rsis Ramsar.org/ris/1609). The recent events indicate that the Park and the floodplain are also socially and politically interdependent. The governance structure that was recently created to coordinate development policies and humanitarian interventions in the floodplain should be extended to Waza National Park as the security and future of both are tightly connected.

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The African softshell turtle *Trionyx triunguis* in Senegal

The African softshell turtle *Trionyx triunguis* is the continent's largest freshwater turtle species. It occurs from Senegal in the west to Turkey at the easternmost extent of its range. It is categorized as Vulnerable on the IUCN Red list, although anecdotal reports suggest a 98% decline in catch per unit effort in West Africa over approximately the last 50 years, and assessors have suggested listing this regional population as Critically Endangered (van Dijk et al., 2017, dx.doi.org/10.2305/IUCN.UK.2017-3.RLTS.T62256A96894956.en). This species has been the focus of few studies, particularly in Africa.

During the course of surveys in February–March and July–August 2021, and January 2022, I spent a total of 12



African softshell turtle *Trionyx triunguis*, caught in the Gambia River near the village of Soucoutha, Senegal. Photo: Pearson McGovern.

weeks searching for this species along the Gambia River (c. 150 km between Gouloumbou and Tako Mayo) in south-east Senegal. My interviews with fishers, and trapping, suggest the turtle is rare, with interviewees stating they see an individual approximately every 5 years. Together with 35 fishers in nearly 30 villages, I only managed to capture one live individual (in January 2022) and I located two carapaces (in August 2021) of individuals consumed in a remote village.

After measuring, marking, and conserving a tissue sample from the live individual, it was released where it was caught near the village of Soucoutha. These three records were, however, sufficient to double the known records for this species in Senegal, highlighting the historical absence of surveys for this species in the country. All three individuals (two juveniles and one adult) were caught within 10 km of each other along the south-west border of Niokolo-Koba National Park, potentially the last remaining area in which this species occurs in Senegal. Although there are no previous survey data for this species in this area, fishers suggested there have been significant declines over the previous 2–3 decades, with older fishers recounting more frequent opportunistic captures of this softshell turtle on their fishing longlines in the past.

During my surveys I provided training on the measuring and marking of turtles—five species occur in this area—for fishers in the villages bordering this area of the National Park, and they were open to ensuring a future for this locally imperilled species. Continued monitoring and a long-term partnership with the fishing communities are needed if the African softshell turtle is to survive in Senegal.

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A historic event marks World Rhino Day 2021 in India

World Rhino Day is observed every year on 22 September to create awareness about the five rhinoceros species and the threats to their existence. The completion of a decade since the day was first observed in 2011 was marked by a historic event on 22 September 2021 in the state of Assam, India, with 2,479 horns of the greater one-horned rhinoceros *Rhinoceros unicornis*, weighing a total of 1,300 kg, destroyed in gas furnaces in Bokakhat. The aim was to send a clear message against rhinoceros poaching, as this species is extensively poached for the presumed medicinal properties of its horn. Some people also consider possession of rhinoceros horn to be a symbol of social status.

The one-horned rhinoceros is the state animal of Assam and is an integral part of its cultural heritage. The state is home to 71% of the global population of the species and the decision to publicly burn the horns was unanimously taken by its cabinet on 16 September 2021. The national Wildlife (Protection) Act, 1972, forbids the trade of rhinoceros horns in India, and international trade in the horn is prohibited by CITES. The state government of Assam was against adding value to illegal trade by selling the horns. The destroyed horns were part of a stockpile of 2,623 horns seized by authorities or recovered from dead individuals since 1979.

The horns were subjected to a process of verification and reconciliation in which every horn was matched with official records, photographed and assigned a unique identification number. This was followed by a detailed DNA analysis of samples from the stock. Verification and reconciliation were carried out during August–September 2021 and involved the forest administration as well as wildlife and forensic experts. Examination of the horns revealed that 21 were imitations and 15 were from the African rhinoceros *Diceros bicornis*. Based on the outcome of DNA analysis and examination of physical characteristics, 94 horns with unique characteristics were preserved for research and academic purposes. This included the second-longest horn in the world, measuring 51.5 cm in length and weighing 2.5 kg, as well as the heaviest rhinoceros horn in the world, measuring 36 cm in length and weighing 3.05 kg. In addition, 50 horns related to pending legal cases were not burnt.

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