



# media release

## World Wildlife Day, 3 March 2024:

### Harnessing digital innovation to protect wildlife – the case of the award-winning organisation, Freshwater Biodiversity Information System (FBIS) in Cape Town

**World Wildlife Day 3 March:** The United Nations General Assembly (UNGA) proclaimed 3 March World Wildlife Day at its 68<sup>th</sup> session on 20 December 2013, in commemoration of the day of signature of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in 1973. The theme for 2024 is “Connecting People and Planet: Exploring Digital Innovation in Wildlife Conservation”. The aim of this significant day is to raise awareness about the latest applications of digital technologies in wildlife conservation and trade. The celebrations highlight how such technologies and services can drive wildlife conservation and human-wildlife coexistence, now and for future generations in an increasingly connected world.

**The benefits that the natural world provides to human society:** World Wildlife Day is an opportunity to celebrate all the world’s wild animals and plants, the contributions that they make to our lives, and the health of the planet, as well as honouring the people who make a difference in protecting the environment. The day serves as a reminder of the urgent need to fight against wildlife exploitation, pollution and human-induced global warming, which have detrimental environmental and social impacts. Billions of people in developed and developing nations, benefit from wild plant and animal species for food, energy, materials, medicine, recreation and many other vital contributions to human well-being. The increasing global biodiversity crisis, with a million species of plants and animals facing extinction, threatens these essential eco-services. Every year more wild animals are driven closer to extinction, and elaborate criminal networks generate billions yearly from illegal wildlife trade which decreases species numbers and threatens national and regional security.

**Wildlife devastation statistics:** In 2019 the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) reported a 47% decline of natural ecosystems and that approximately 25% of species are already threatened with extinction globally. Unsustainable hunting has been identified as a threat for over 1,300 wild mammal species. According to the 2022 [Living Planet Report](#) by the World Wildlife Fund (WWF), global wildlife populations have declined by 68% since 1970, mainly due to human interference. The global abundance of oceanic sharks and rays has declined by 71% over the last 50 years, 65% due to hunting for meat and medicinal purposes which severely affect complex oceanic food webs. (For more information see the [NSTF Discussion Forum: Ocean Science for Sustainable Development \(15-16 November 2023\)](#), where experts explained the depletion of ocean resources and biodiversity loss.)

Freshwater environments are rich in biodiversity, and freshwater is essential for drinking, food security, industrial activity and domestic use. This is why more than 50% of the human population lives within 3 km of a freshwater body. However, this human proximity can be a threat to freshwater species through pollution, stream abstraction or flow modification which threatens the survival of migratory fish. Since 1970 a monitored quota of 1,398 freshwater fish, mammal, amphibian, reptile and bird species populations have declined by an average of 83%.

**Human-induced climate change driving mass mortality events:** The decline in nature and climate change are interconnected, although land-use remains the biggest threat to wildlife since it alters natural habitats. Climate change is likely to become the major cause of mass biodiversity loss in the coming decades. Rising temperatures are already driving mass mortality events, as well as the extinctions of entire species. The Intergovernmental Panel on Climate Change (IPCC) 6<sup>th</sup> Assessment Report stated that climate change impacts such as droughts and heatwaves are causing mass species decline in trees, birds, bats, and fish. A single hot day in 2014 killed more than 45,000 ‘flying fox’ bats in Australia.

**An urgent need for wildlife conservation:** Climate change and increased wildlife mortality are not just an environmental issue, but they are economic, social, and ethical issues also and must be addressed together with the Sustainable Development Goals (SDGs). Without conservation, various species will cease to exist, leading to a decline in the genetic variety, number of species, individual organisms within a given species, and biological communities within a defined geographic area.

**Digital technologies to the rescue:** Thankfully, innovative digital technologies have made research, communication, tracking, DNA analysis and many other aspects of wildlife conservation more efficient and accurate. The technologies include artificial intelligence (AI) powered solutions such as apps that help distinguish the different types of flora and fauna in the same species, advanced drones roaming large areas to track and locate wildlife and breeding or nesting sites, and earth observation through satellite technology. There are advanced tracking systems, and real-time data analytics, allowing conservationists to identify, monitor, track and ultimately preserve wildlife.



**Freshwater Biodiversity Information System (FBIS):** To observe this significant day, the NSTF celebrates and highlights the outstanding and significant work of the Freshwater Research Centre (FRC) together with Kartoza. The FRC team and Kartoza won the 2023 [Data for Research Award](#), at the prestigious [NSTF-South32 Awards](#). This non-profit company based in Cape Town, has embraced the use of digital innovation in its freshwater research. The FRC team has collated a database for scientific data about local freshwater species, making it freely available on their FBIS. Their intention was to organise and digitise years’ worth of research that was collecting dust on shelves.

The executive director of the FRC [Dr Helen Dallas](#), states: “We wanted to create a space that brought all of this information together, all of these huge and valuable data records to be reused multiple times for different purposes.” She says people had always approached her with questions about freshwater biodiversity and she later realised that there was a demand for this information.



In developing the FBIS, they consulted with end users to model the system according to their needs. For instance, one could search for the name of a particular critically endangered species and instantly receive information about that species’ distribution, threat status and whether it is endangered or not. Dr Dallas says, “Data from the FBIS platform is being integrated into the environmental impact assessment (EIA) screening tool of the Department of Forestry, Fisheries and the Environment (DFFE)”. This means that the FRC will be able to assess potential environmental impacts of any new developments in or around certain freshwater bodies. She adds that they are very proud to have also received international recognition and praise. Dr Dallas concluded that they are already in talks to start a global repository based on their FBIS.

**About the NSTF:** NSTF is an independent non-profit [stakeholder body and network](#) – a civil-society forum of over 130 [organisations involved in science, engineering, technology \(SET\) and innovation in SA](#).

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**References/Sources:**

- [World Wildlife Day | Background | United Nations](#)
- [Celebrating World Wildlife Day in Geneva and Beyond – Geneva Environment Network](#)
- [World Wildlife Day — International Days](#)
- [Today is World Wildlife Day | CMS](#)
- [https://wwfpr.awsassets.panda.org/downloads/lpr\\_2022\\_full\\_report.pdf](https://wwfpr.awsassets.panda.org/downloads/lpr_2022_full_report.pdf)
- [Guest Article: Partnerships Key to Meeting Wildlife Conservation Targets | SDG Knowledge Hub | IISD](#)

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The National Science and Technology Forum (NSTF), established in 1995:

- is a broadly-representative stakeholder body for all science, engineering and technology (SET) and innovation organisations in South Africa
- gathers stakeholders around burning issues of national and global interest, across the public and private sectors, including matters of public policy
- includes a network of professional societies in SET and STEM education (STEM = science, technology, engineering and mathematics) - the NSTF proSET membership sector.
- recognises, awards and profiles the outstanding contributions of individuals and groups to SET and innovation through the prestigious NSTF Awards
- runs and supports collaborative projects and youth outreach, including recognition of top performance in mathematics and science, role modelling, bursary and STEM career information
- runs and supports the STEMulator.org which attracts youth and educators to Explore>Discover>Learn the world of STEM including careers. (Established by NSTF proSET)

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