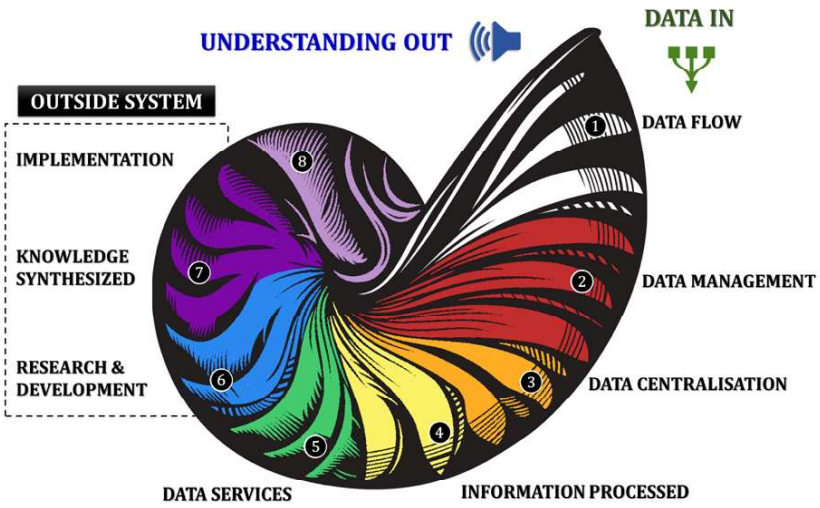
# Drowning in data - advancing biodiversity informatics and ecological modelling in South Africa

Text and art by Sandra MacFadyen




A unified strategy of biodiversity data management is urgently needed as concerns over climate change, land use change, pollution and natural resource exploitation rise and the global crisis for biodiversity conservation continues.

The Mathematical Sciences Hub (BioMath; https://www0.sun.ac.za/biomath/) at Stellenbosch University is exploring innovative new ways to synthesise and analyse vast amounts of ecological data to develop a more holistic understanding of the environment. This type of understanding is essential for informing ways to halt, or even reverse, biodiversity loss.

Together with the National Institute for Theoretical and Computational Sciences (https://nithecs.ac.za/) and South African National Parks, BioMath is working towards a future where biodiversity data is more easily accessible by designing user-friendly tools, reproducible workflows and models to consolidate biodiversity data sources and predict future dynamics of biodiversity change. To achieve these goals, BioMath is developing a biodiversity data pipeline that is locally relevant and globally integrative. The pipeline seeks to improve the management, presentation, discovery, exploration, integration, and analysis of biodiversity data. Plans are also underway to host an Ecological Hackathon in late-October 2023 to develop workflows addressing important, yet unanswered questions in ecology.

MacFadyen S, Allsopp N, Altwegg R, Archibald S, **Botha J**, Bradshaw K, Carrathurs J, de Klerk H, de Vos A, Distiller G, Foord S, **Freitag-Ronaldson S**, et al. 2022. Drowning in data, thirsty for information and starved for understanding: A biodiversity information hub for cooperative environmental monitoring in South Africa. Biological Conservation, 274, 109736.

*Cheetah captured on camera trap in Kruger National Park, the preceeding frames were filled with impala running. This project is a collaboration between SANParks and the University of Florida, (USA) and studies the effects of artificial dams on ecosystems. Camera trap projects typically generate huge volumes of data. Photo provided by Robert McCleery.*