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South Africa's national environmental screening tool: an online tool to ensure responsible land use decision-making and the protection of species of conservation concern

Environmental Impact Assessments (EIAs) provide a framework for assessing the potential impacts of development on biodiversity, and other environmental sensitivities to ensure responsible decision-making. While South Africa has progressive legislation governing development, flaws and loopholes in the regulations have, on occasion, led to the irreversible loss of critical habitats. Recent legislative changes have been made to address these shortcomings, one of them being the introduction of a national Environmental Screening Tool. The screening tool is an online Geographic Information System tool that screens for environmental sensitivity at the site of a proposed development. Submission of a report generated by the screening tool is now mandatory when applying for environmental authorisation for any infrastructure development.

A fundamental step in the EIA process relates to understanding and identifying the community of threatened species that development may impact. Quantifying biodiversity at a development site is a difficult undertaking given our imperfect ability to fully detect all species present through ecological surveys. In the absence of complete species inventories, it is essential to have complementary methods to provide insight into patterns of local biodiversity. Species distribution models (SDMs) provide a robust and objective model-based method to complement field surveys.

The Endangered Wildlife Trust, in collaboration with the South African National Biodiversity Institute and BirdLife South Africa, has over the last two years developed a database comprising a mix of SDMs and range maps for threatened and endemic terrestrial animals in South Africa for over 400 species from six taxa, including: amphibians, birds, butterflies, mammals, reptiles, and invertebrates. These data have been integrated into the screening tool and have resulted in an unprecedented collation of threatened species data used for the explicit purpose of supporting responsible land use decision-making.

In this talk I outline the structure and underlying species data of the tool itself, the methodologies used to develop the SDMs, the results from the analyses, how the tool is used in the EIA process, and how model outputs developed for the tool have resulted in several other promising conservation research avenues.