

Discovering and documenting South Africa's biodiversity

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This presentation explores the importance of identifying species, the challenges associated with dealing with an increasing demand for information in the face of declining capacity to provide this information, and in terms of the enormous number of species yet to be discovered and named, and reviews some global initiatives being implemented locally that could address the challenges.

Species are probably one of the more familiar components of biodiversity; they are used for assessing threat status, indicating habitat health and quality, and they are often the actual face of conservation initiatives. Each one of the world's 1.7 million known species has a unique scientific name, which allows access to all information about that species (for example, whether it is a pest, parasite, alien invasive, threatened endemic, useful in medicine or poisonous). While allocating the correct name to many groups of plants and animals can be done using a field guide, for most species only a taxonomic expert will be able to identify the species. An additional challenge is that a large number of species, especially amongst the invertebrates and fungi, have not yet been discovered or described, and large areas of South Africa have not yet been surveyed to document the biodiversity. Specialist capacity to identify species is declining, while the demand for this service is increasing. Use of modern technology provides promising solutions to these challenges. Three integrated approaches for documenting and discovering biodiversity include surveys of neglected but important areas; identification of species using bar-coding, where a small fragment of DNA is sequenced to identify the species; and the Encyclopedia of Life where information on every species can be co-ordinated and made accessible.