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Centre for
INVASION
BIOLOGY

WORKING PROJECT TITLE	The effect of climate change on the impacts of invasive species in South African protected areas
CORE TEAM MEMBER	Prof Tamara Robinson-Smythe
COLLABORATORS	Dr Nicola van Wilgen (SANParks) Dr Sabrina Kumschick (CIB) Dr Katelyn Faulkner (SANBI)
ACADEMIC LEVEL OF THE PROJECT	PhD
PROJECT BACKGROUND	Table Mountain National Park (TMNP) and Addo Elephant National Park (AENP) are important protectors of native biodiversity. These systems and the services they provide are, however, threatened by invasive species. A deep understanding of invasion dynamics within these parks is required for management targets to be achieved. The successful applicant will explore temporal invasion dynamics in TMNP and AENP by using historical records, ground truthing them with field surveys and projecting future invasions under climate change scenarios. The candidate will quantify the impacts of select invasive species within the two parks using the Ecological Impact Classification for Alien Taxa (EICAT) and Socio-economic Impact Classification for Alien Taxa (SEICAT) schemes. In a novel approach, the candidate will consider how mechanisms of impacts identified may change under future climate change scenarios. Finally, the candidate will model the potential distribution and spread of these impactful species within TMNP and AENP. Resulting species lists will be submitted to SANPARKs and SANBI to contribute to the National Status Report on Biological Invasions, while EICAT/SEICAT assessments contribute to the IUCN's database of alien species' impacts, hosted on the Global Invasive Species Database.

LENGTH OF PROJECT/FUNDING (IF FUNDED)	The running costs for the project are fully funded. The successful applicant will be supported in applying for NRF, SANBI, Stellenbosch University and departmental bursaries.
REQUIREMENTS	MSc in ecology or relevant field At least one publication A foundational knowledge of invasion biology A systematic and detailed approach to research Excellent data management and analytical skills Willingness to travel and valid driver's licence Good people skills and an ability to work within a diverse team Proficient in R and GIS Experience with species distribution modelling An interest in protected area management
FURTHER READING	Bacher S, Blackburn TM, Essl F, Genovesi P, Heikkilä J, Jeschke JM, Jones G, Keller R, Kenis M, Kueffer C, Martinou AF, Nentwig W, Pergl J, Pyšek P, Rabitsch W, Richardson DM, Roy HE, Saul W, Scalera R, Vilà M, Wilson JRU, Kumschick S (2018) Socio-economic impact classification of alien taxa (SEICAT). Methods in Ecology and Evolution 9(1): 159–168, doi: 10.1111/2041-210X.12844 Bellard C et al. (2013) Will climate change promote future invasions? Global Change Biology 19: 3740-3748. Cheney C, Esler KJ, Foxcroft LC, Van Wilgen NJ, McGeoch MA (2018) The impact of data precision on the effectiveness of alien plant control programmes: a case study from a protected area. Biological Invasions 20(11): 3227–3243, doi: 10.1007/s10530-018-1770-8 Harper J et al. (2022) Application of a trait-based climate change vulnerability assessment to determine management priorities at protected area scale. Conservation Science and Practice. 4(8): e12756 https://doi.org/10.1111/csp2.12756

	IUCN (2020a) IUCN EICAT Categories and Criteria. The Environmental Impact Classification for Alien Taxa (EICAT) First edition. IUCN, Gland, Switzerland and Cambridge, UK. IUCN.https://doi.org/10.2305/IUCN.CH.2020.05.en Hellmann JJ et al. (2008) Five potential consequences of climate change for invasive species. Conservation Biology 22: 534-543.
CONTACT DETAILS OF CORE TEAM MEMBER	Visit the Centre for Invasion Biology's website (https://blogs.sun.ac.za/cib/) to find out more about the Centre and contact Prof Tammy Robinson-Smythe at trobins@sun.ac.za When applying please include your CV and a motivation for why you are suited to this position. Please be prepared to provide the details of a past supervisor as one of your references.