The TSX: Estimating long-term trends of Australia's threatened and near-threatened species

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Abstract: Efforts to reduce species extinctions are advancing globally. The justification, design, and evaluation of targeted conservation actions for any threatened species hinges on up-to-date and robust information on population trends. Yet, until recently, Australia had limited infrastructure for collating the required data and consistently producing and reporting on threatened species trends. The first of its type in the world, the Australian Threatened Species Index (TSX) provides reliable and robust measures of changes in the relative abundance of Australia's threatened and near-threatened species at national, state, and regional levels. In this presentation we will provide introductory information on the methodologies used to generate the index as well as highlight the TSX's online web-application and data visualization tools, which provide a virtual laboratory currently used by government, NGOs, conservation practitioners and researchers across Australia. Looking to the future of the TSX, and its application in conservation decision support, this presentation will also explore the possibility of using advanced statistical approaches to model trends based on species traits and environmental and management covariates, with a view to both infer the drivers of population trends and ultimately predict them into the future under different management and climate scenarios. With continued growth and development, the TSX will strengthen its position as the central repository of threatened species abundance data for Australia, helping support conservation planning for our most imperilled species and bend the curve of species declines.

Keywords: Biodiversity, conservation, decision support, threatened species, population trends