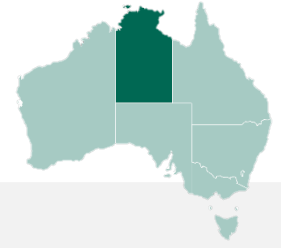


2022 Threatened Species Index Factsheet: Northern Territory



Background

Nearly 2,000 flora and fauna species or subspecies are listed as threatened or extinct in Australia. Monitoring of these species plays a critical role in assessing how populations are changing over time and helps to identify where management actions are and are not working.

In recent decades, hundreds of threatened species have been monitored across Australia by dozens of different government, non-government and community groups. Previously, however, there has been no means of bringing these data together to assess long-term trends, and to assess the status of different groups of species across different regions of Australia.

Australia’s Threatened Species Index (TSX) is based on the Living Planet Index, a method developed by World Wildlife Fund and the Zoological Society of London. The LPI method enables trends from different species to be aggregated together at a national scale, as well as across jurisdictional, taxonomic and other groupings (e.g. for each state and territory, and for different functional groups and management categories).

Assembling all of the data is a big job and is being staged. Data and trends for threatened birds, mammals and plants were released in 2018, 2019, and 2020 respectively. In 2021 and 2022, new data was collated and trends for each of these groups were updated.

The TSX allows Australian governments, non-government organisations, stakeholders and the community to better understand and report on how threatened species abundances are changing over time. It will also enable us to better understand the performance of high-level strategies and the return on investment in threatened species recovery efforts.

More data (and species) will be added to the index as they become available each year, increasing the representativeness and robustness of the findings.

How to interpret the index?

The index itself shows the average change in the abundance of threatened species compared to a baseline year. The baseline year of 1985 was chosen for the national index because very few of Australia’s monitoring programs originated before 1985. For Northern Territory, the baseline year has been set to 2000 due to data limits before this year.

The baseline year has an index value of 1. Changes in the index are proportional—a year with a value of 0.5 indicates that on average the abundance of each taxa has decreased to half the size they were during the baseline year; a value of 1.5 indicates that on average abundance is 50% above the baseline year.

The grey cloud represents variability in the trends of individual species that make up an overall multi-species index. It is created by randomly sampling species trends from all possible trends in the dataset 100 times and dropping the 5 trends that are furthest from the average, resulting in a 95% “confidence limit”.

2022 TSX for Northern Territory

The 2022 Threatened Species Index for the Northern Territory includes data for 28 taxa, including 17 birds, 10 mammals and 1 plant.

The overall TSX value for the NT in 2019 is 0.46. This means that, on average, the abundance of threatened species populations represented in the index from the NT decreased by 54% between 2000 and 2019 (Figure 1).

In the following pages of this factsheet, we will walk you through the separate indices for threatened birds, mammals, and plants for the Northern Territory.

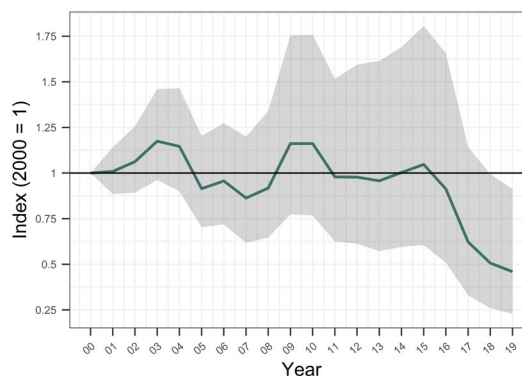


Figure 1: The Northern Territory 2022 Threatened Species Index based on all data provided on threatened and near-threatened species. The green line shows the change in species abundance relative to the baseline year of 2000, where the index is set to 1.0. The grey cloud shows the confidence limit.

Threatened Birds in Northern Territory

NT Bird Index - Quick Facts	
Ref. year	2000
2019 index value	0.59
% change from 2000	-41%
Time-series	245
Taxa	17
Sampling years	1868
Av. time-series length	13.91



The overall index value for threatened birds in the Northern Territory in 2019 is 0.59. This suggests an average decline of 41% in population abundances since 2000, for the 17 bird taxa represented (Figure 2A). In the same context, the national threatened bird index reveals a decline of 50% since 2000, which is based on data for 70 taxa.

If we subset the NT bird index to look at trends for specific groups, we see mixed results. For the four NT terrestrial birds for which we have data, we see a severe average decline of 91% between 2000 and 2018 (although the data are very limited). For the same time period, but looking at migratory shorebirds, we see an increase in abundance by 8% in NT.

The data underlying the NT bird index have higher coverage in the north of the territory but are limited for central and southern regions of the semi-arid and arid zones (Figure 2B). For birds, both the number of time-series and the number of taxa being monitored in the NT has substantially increased since 1992, reaching 17 species by 1999 and remaining stable since (Figure 2C and 2D). The number of time-series included reached a peak in 2012. You can find a summary of the species included in this index by clicking “Data summary” on the [TSX visualisation tool](#).

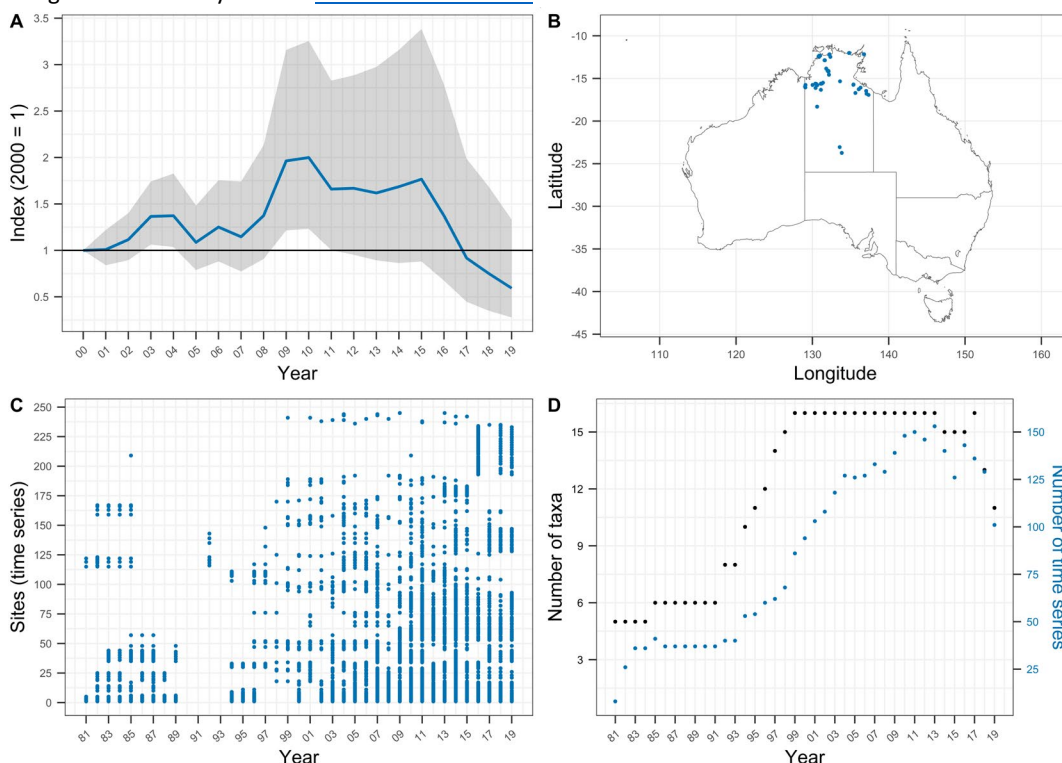


Figure 2:
 A) The Northern Territory 2022 Threatened Bird Index based on all data provided on threatened and near-threatened birds. The blue line shows the change in bird abundance relative to the baseline year of 2000, where the index is set to 1.0. The grey cloud shows the confidence limit.
 B) A map showing where the threatened bird data, submitted to the index, were recorded in the Northern Territory. The blue dots indicate repeatedly monitored sites.
 C) Dot plot showing the years for which monitoring data were available to compile the index. Each row represents a time series where a species was monitored with a consistent method at a single site in the Northern Territory.
 D) The number of species (in black circles) and number of time series (in blue circles) used to calculate the Northern Territory birds index for each year.

Threatened **Mammals** in Northern Territory

NT Mammal Index - Quick Facts	
Ref. year	2000
2018* index value	0.30
% change from 2000	-70%
Time-series	206
Taxa	10
Sampling years	702
Av. time-series length	14.64



The overall index value for threatened mammals in Northern Territory in 2018 is 0.30. This suggests an average decline of 70% in population abundances since 2000, for the 10 mammal taxa represented (Figure 3A). In the same context, the national threatened mammal index (for 2018) reveals a decline of 25% since 2000, which is based on data for 79 taxa.

The trend for NT mammal populations included in the TSX is one of steep decline from 2000 to 2008, with some stabilisation since that time. However, the data are patchy in space and time. Most data stem from the Top End, with very few monitoring sites located in the central and southern regions of the semi-arid and arid zones (Figure 3B). Numerous sites also have limited repeat years of surveys, meaning either short time-series or significant gaps between survey periods (Figure 3C). For mammals, both the number of sites and the number of taxa being monitored in NT has increased through time, peaking at around 2014 (Figure 3C and 3D). You can find a summary of the species included in this index by clicking “Data summary” on the [TSX visualisation tool](#).

*2018 was chosen as the final year for the NT mammal index due to data for only a single species being available in 2019.

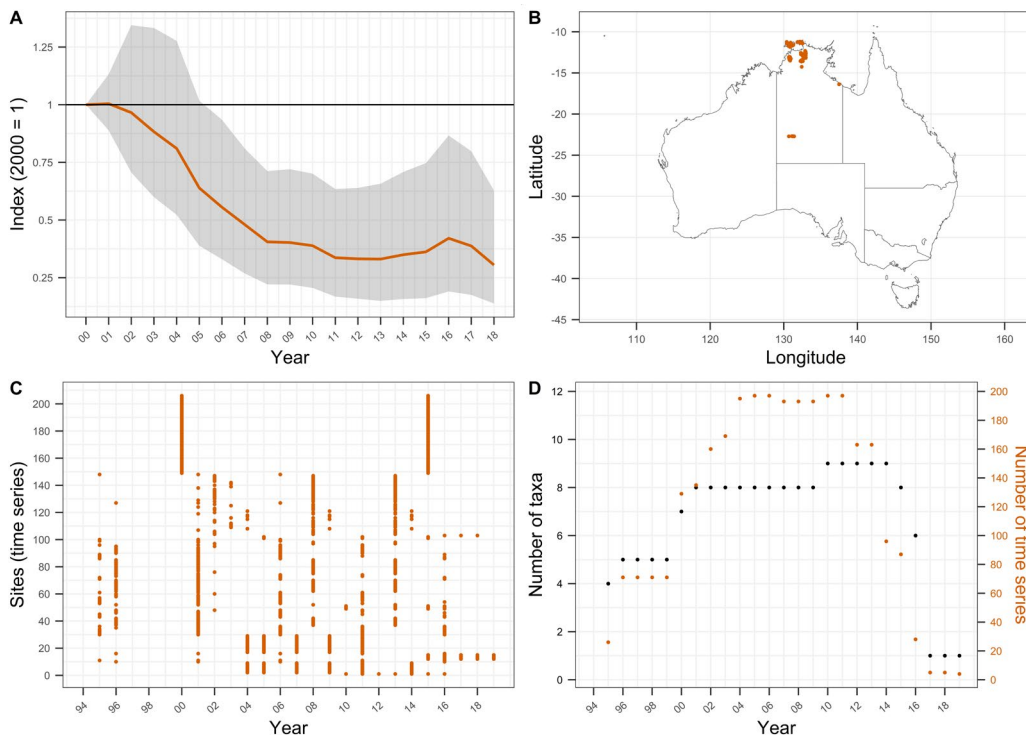


Figure 3:
 A) The Northern Territory 2022 Threatened Mammal Index based on all data provided on threatened and near-threatened mammals. The orange line shows the change in mammal abundance relative to the baseline year of 2000, where the index is set to 1.0. The grey cloud shows the confidence limit.
 B) A map showing where the threatened mammal data, submitted to the index, were recorded in the Northern Territory. The orange dots indicate repeatedly monitored sites.
 C) Dot plot showing the years for which monitoring data were available to compile the index. Each row represents a time series where a species was monitored with a consistent method at a single site in the Northern Territory.
 D) The number of species (in black circles) and number of time series (in orange circles) used to calculate the Northern Territory mammal index for each year.

Threatened **Plants** in Northern Territory

NT Plant Index - Quick Facts

Ref. year	NA
2019 index value	NA
% change from 2000	NA
Time-series	1
Taxa	1
Sampling years	3
Av. time-series length	29



Acacia peuce. Image: Caddie Brain

Data are insufficient to create an index of abundance trends for Northern Territory’s threatened and near-threatened plant species, which requires data for at least 3 species in the reference year. The TSX holds time-series data for just 1 species, covering just 1 time series.

The Northern Territory plant for which the TSX hold data is *Acacia peuce* (one site, 1980–2008). This dataset originates from the Simpson Desert. As above, data are not sufficient to build a formal trend. It will be imperative to collate additional data sets for Northern Territory’s threatened and near-threatened flora in the coming years, to enable reliable trends for this group to be estimated.

What should we know about the data?

- The TSX includes species listed as threatened or near-threatened under both the EPBC Act and the IUCN Red List. State- and territory-based assessments are not yet incorporated into the index.
- The composite indices presented in this factsheet are based only on data provided by our custodians endeavouring to meet the TSX suitability criteria. For example, only time series produced from standardised monitoring programs and with a minimum length of two years, collected between 2000 and 2019 inclusive, were used for index calculation.
- To ensure that species trends are suitable for inclusion in the index, feedback surveys are sent to each TSX data custodian requesting that they assess the time series data and trends produced from their dataset.
- When interpreting the index, it is important to consider the proportional representation of the threatened and near-threatened taxa included, as well as the spatial and temporal coverage of the time-series data. The reliability of the trend at any point in time is directly related to coverage and quantity of underlying data.
- The data on spatial and taxonomic representativeness can be useful for identifying strategic monitoring opportunities. Increasing the number of species, regions and groups monitored, particularly in regional gaps and for poorly represented groups, will strengthen the representativeness of the index.

Further information

For more information or to become a *Friend of the Index* and receive updates on the progress of the project please contact the TSX Team at tsx@tern.org.au

The data underpinning the index were contributed by many different individuals and organisations, including Commonwealth, state and territory agencies, research institutions and environmental non-government organisations and consultants. Visit [this web page](#) for more information.

Go to the [web-app](#) to access and explore the data behind the 2022 TSX and to produce reports tailored to your particular needs.

The TSX is supported through funding from the Terrestrial Ecosystem Research Network (an NCRIS enabled facility) and the Australian Government's Department of Climate Change, Energy, the Environment and Water.

Do you have monitoring data on nationally threatened species that has been collected in a standardised way and repeated through time? You can download the TSX data upload template [here](#) and upload it together with your data to be considered for next year's index [here](#). A video tutorial on filling out the template can be viewed [here](#).



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