

Australia's Threatened Bird Index

Summary of trends up to 2020 Released November 2023

Dated: 29/01/2024

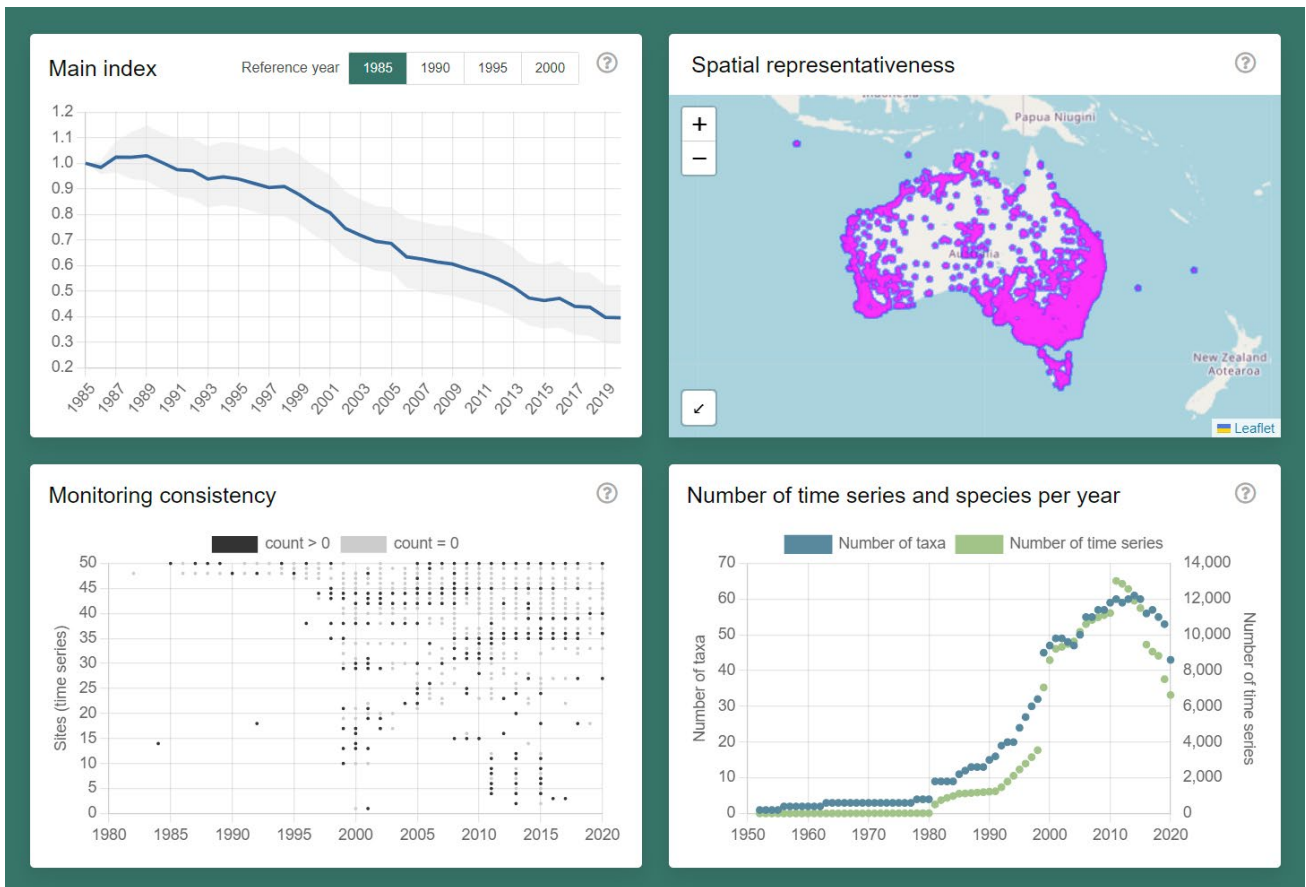


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Background

Over 2,000 flora and fauna species or subspecies are classified as near threatened, threatened or extinct in Australia. Monitoring of threatened 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.

The Threatened Species Index (TSX)

The TSX aims to provide reliable and robust measures of change in the relative abundance of Australia's threatened and near-threatened species, with data currently collated for birds, mammals, and plants. Understanding these changes in species populations is crucial for monitoring progress towards Australia's conservation targets.

The TSX is managed by the Australian Government's NCRIS-enabled Terrestrial Ecosystem Research Network (TERN) national research infrastructure capability at The University of Queensland. The index was established by the Australian Government-funded National Environmental Science Program's former 'Threatened Species Recovery Hub' and the not-for-profit organisation, BirdLife Australia.

The TSX brings together thousands of monitoring datasets from across Australia and releases trend updates annually. Trends are calculated using the *Living Planet Index* (LPI) methodology, 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 different functional groups and management categories).

Assembling all the data is a big task 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. In 2023, a comprehensive update to the Threatened Bird Index has occurred. This is the first major update to the bird index since it was first released in 2018. This significant update occurred in collaboration with BirdLife Australia, the largest data contributor to the Threatened Bird Index to date.

What is this document for?

This document provides government and non-government data contributors and collaborators from across Australia with a summary of the results from the *Threatened Bird Index 2023*. Below you will find national trends along with a break-down of trends among species groups. Similar information is provided at the state and territory levels. The full set of trends can be viewed [here](#). See also **Figure A1** in the Appendix illustrating how to interpret the Threatened Bird Index trend graphs.

Note that a 3-year lag is implemented, given the time it takes for the data collectors to process, archive, and share the data with the index. **As such, the 2023 release includes trends up to 2020.** Note also that all species and sub-species classified as threatened or near-threatened according to the Australian Government's Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act), the International Union for Conservation of Nature's (IUCN) Red List and/or The Action Plan for Australian Birds 2020 (Garnett & Baker, 2022) are considered for inclusion in the 2023 Threatened Bird Index.

Further information

If you require clarification of any of the content in this document, would like more information about the project or to become a *Friend of TSX* and receive updates on our progress of the project, please contact the TSX Team at tsx@tern.org.au.

The Threatened Bird Index 2023

The dataset

<i>Taxa represented</i>	72 (up 14 from 2018)
○ <i>Terrestrial birds</i>	43 (up 8 from 2018)
○ <i>Shoreline (migratory) birds</i>	13 (up 3 from 2018)
○ <i>Marine birds</i>	15 (up 4 from 2018)
○ <i>Wetland birds</i>	1 (down 1 from 2018)
<i>EPBC listed taxa represented</i>	58
<i>National priority taxa represented</i>	9
<i>IUCN listed taxa represented (threatened)</i>	29
<i>IUCN listed taxa represented (near threatened)</i>	10
<i>2020 Bird Action Plan listed taxa represented</i>	58
<i>Total data sources</i>	54 (up 15 from 2018, see Appendix)
<i>Total number of time series</i>	19,814 (up 9,065 from 2018)
<i>Total number of sites</i>	10,784 (up 6,548 from 2018)

Key findings: National trends

Overall trends

At the national scale, threatened and near-threatened bird species continue to trend downward, with an **average decline of 60% in relative abundance since 1985** for the 72 taxa represented (**Figure 1, Tables A2 and A3**). Overall, the relative abundance of threatened and near-threatened bird species in the TSX database has declined by 2.2% per annum since 2000.

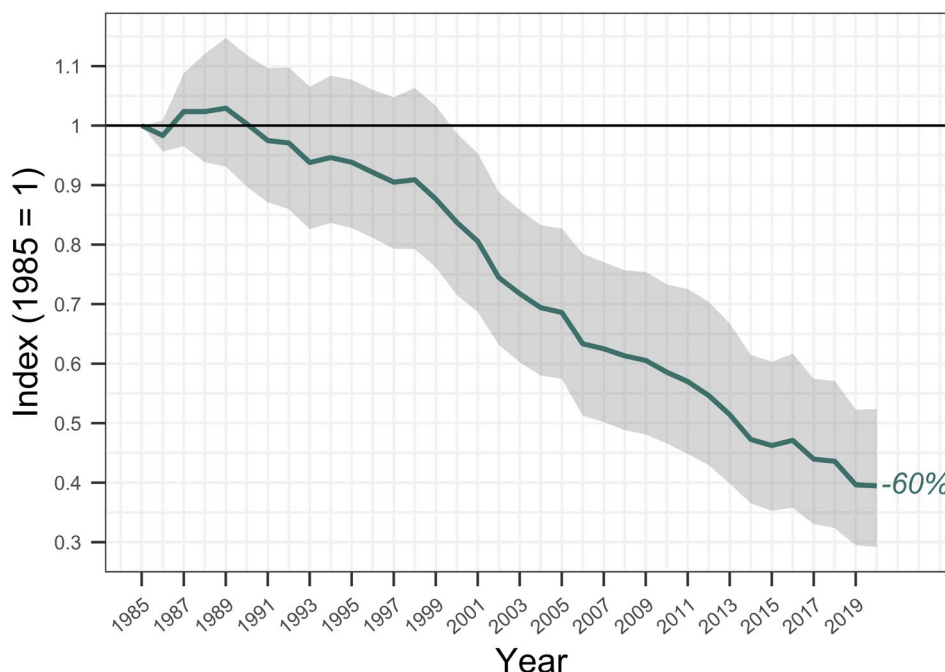


Figure 1. The *Threatened Bird Index 2023*, showing trends up to 2020 across all taxa. The green line shows the average change in relative abundance compared to the baseline year of 1985 where the index value is set to 1. The shaded areas show the confidence limits.

Trends for National Priority Species

The TSX holds time-series data for nine of Australia’s 22 birds listed as national priority species under the Australian Government’s Threatened Species Strategy. This includes seven terrestrial bird taxa, one shoreline (migratory) bird taxa and one wetland bird taxa (see **Table A2**), totalling 1,404 time series.

The average trend across these datasets is shown in **Figure 2**. On average, the relative abundance of the 9 national priority bird species for which the TSX holds data has **declined by 83% since 2000**. Declines were steep from 2000, with some stabilisation since 2011.

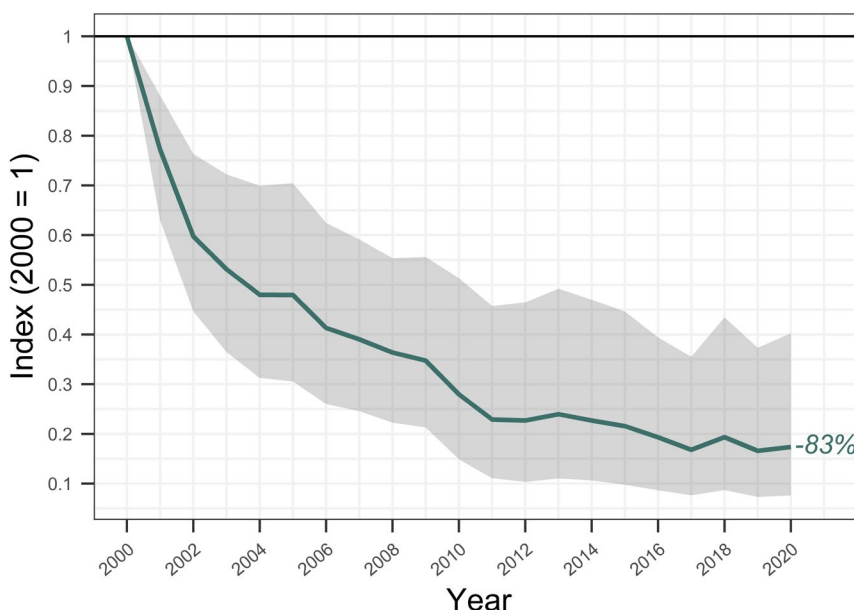


Figure 2. The trend for national priority bird species between 2000 and 2020. The green line shows the average change in relative abundance compared to the baseline year of 2000 where the index value is set to 1. The shaded areas show the confidence limits.

Comparison of trends among species groups

Data collated for the TSX may be used to compare the trends for major phylogenetic, morphological or ecological species groups. **Table 1** provides a comparison of trends for the bird species groupings monitored in the index, since the year 2000. Plots for each trend are provided in the Appendix. As data for migratory shorebirds is abundant from 1985 onwards, and downward trends with earlier reference years (1985, 1990, 1995) are more severe, these trends are provided in the Appendix.

Table 1. Bird species groups ranked according to their change in relative abundance since 2000. The number of taxa included in each group, and the number of monitoring datasets (time series) available for each group, are also provided. Percentage values provided within parentheses indicate the proportion of all listed taxa represented in the index for each bird group.

Bird Group†	Percent change since 2000	Number of taxa	Number of time series
Terrestrial	-62.5%	43 (26%)	12,112
Shoreline (migratory)	-42.5%	13 (54%)	7,114
Marine	-33.8%*	15 (19%)	586

†Wetland birds are not yet sufficiently represented in the index to produce estimates for this important functional group.
 *This trend is for 2000–2019 given an unreliable final data point (two taxa from two locations).

Key findings: State and Territory trends

A comparison of the average trend across all bird taxa for Australia’s states and territories is provided in **Table 2** and **Figure 3** for the period 2000–2020. There is considerable variability in the trends across these jurisdictions.

ACT + New South Wales, Victoria, Western Australia and Tasmania all display **average declines in relative abundance of between 27% and 57%** (**Figure 3C, 3D, 3E and 3F**). The most significant declines in the relative abundance of threatened and near-threatened bird species were in **South Australia and Queensland**, with respective **average declines of 69.6% and 65.7%** (**Figure 3A and 3B**). Data held for the **Northern Territory** suggest an **average decline of 3.4%** across the 18 bird taxa represented for that Territory (**Figure 3G**).

Table 2. Comparison of bird trends for Australia’s states and territories ranked according to their change in relative abundance since 2000.

State	Percent change since 2000	Number of taxa	Number of time series
South Australia	-69.6%	28	2,165
Queensland	-65.7%	25	3,177
ACT + New South Wales	-56.3%	35	4,505
Victoria	-47.9%	32	4,307
Western Australia	-29.9%	23	2,742
Tasmania	-27.6%	21	376
Northern Territory	-3.4%	18	432

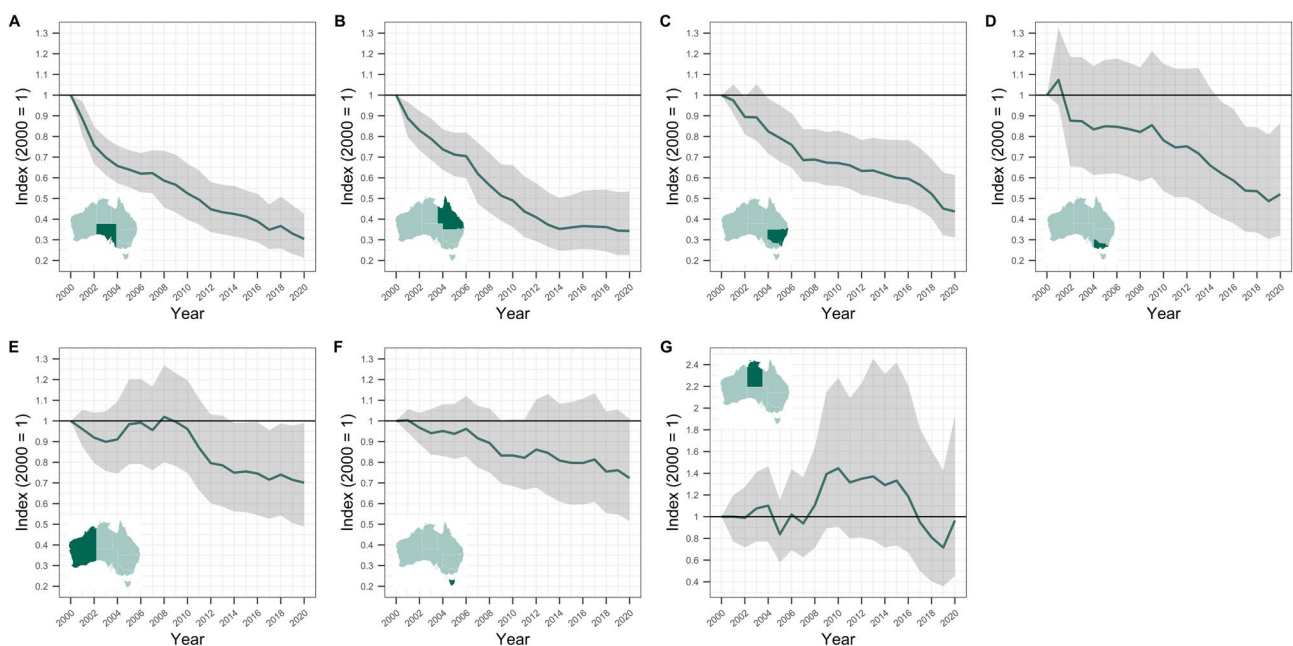


Figure 3. The Threatened Bird Index 2023 for each state and territory between 2000 and 2020. The green lines show the average change in relative abundance compared to the baseline year of 2000 where the index value is set to 1. The shaded areas show the confidence limits. **A)** South Australia. **B)** Queensland. **C)** New South Wales and the Australian Capital Territory. **D)** Victoria. **E)** Western Australia. **F)** Tasmania. **G)** the Northern Territory.

What we should know about the data

The multi-species trends listed above represent the best available data for Australia’s threatened and near-threatened bird species. Data quality was maximised by 1) confirming that each dataset had been produced by standardised monitoring and 2) by assessing the trends in collaboration with data custodians.

Nevertheless, it is important to consider the taxonomic, spatial and temporal biases when interpreting the trends generated from these data, and the uncertainty around the trends.

National dataset

The National trends are based on monitoring data for 72 taxa (Table A2), collected at 10,784 sites and 19,814 time-series datasets. However, these data stem largely from the south and east of the continent, with less representation of inland areas and limited representation of arid Australia (**Figure 4B**). While this means the more developed parts of the country are well represented, it is also true that the distribution of threatened taxa aligns with this spatial pattern.

The temporal accumulation of data must also be considered when interpreting the national trends. In 1985 (the reference year), data were available for 11 taxa (approx. 15% of total) from 1,111 time series (approx. 6% of total). The number of taxa and time series included in the calculation of the index grew rapidly after 1990 before declining in more recent years (**Figure 4D**). In turn, data quality is weakest early and late in the time series.

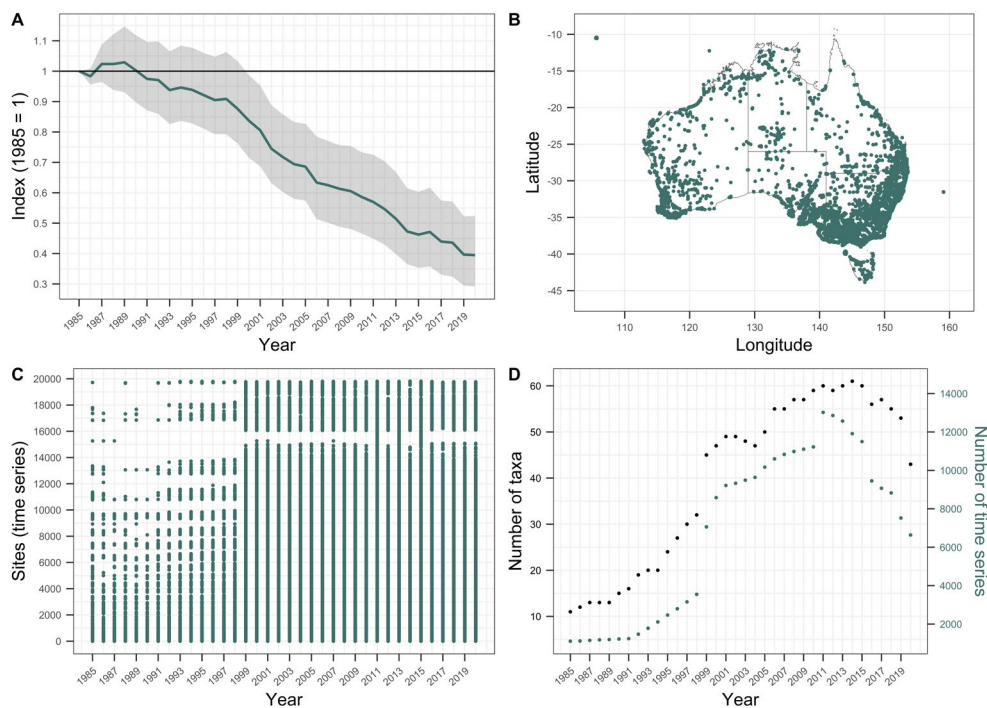


Figure 4. **A)** The 2023 Threatened Bird Index for Australia based on all data provided on threatened and near-threatened bird taxa. The green line shows the average change in relative abundance compared to the baseline year of 1985 where the index value is set to 1. The shaded areas show the confidence limits. **B)** A map showing where the threatened bird data, submitted to the index, were recorded in Australia. The green dots indicate repeatedly monitored sites. **C)** A dot plot showing the years for which monitoring data were available to compile the index. Each row represents a time series where a taxa was monitored with a consistent method at a single site in Australia. **D)** The number of taxa (in black circles) and number of time series (in green circles) used to calculate the Australia bird index for each year.

Data for Queensland

The data underlying the Queensland bird index have good coverage for both the central- and south-east coast but are marginal for North Queensland and in the arid zones (**Figure 5B**). For birds, both the number of sites and the number of taxa being monitored in Queensland has substantially increased since 1992, with data in the index peaking at around 2007 (**Figure 5C and 5D**).

Reference year	2000
2020 index value	0.343
% change from 2000	-65.7%
Time series	3177
Taxa	25
Av. time-series length	9.1
Data sources	8

If we subset the Queensland bird index to look at trends for specific groups, we see some variation in the extent of these declines. For example, Queensland’s migratory shorebirds that are represented in the index have decreased in relative abundance by 60.6% since 2000, while Queensland’s terrestrial birds have declined substantially more on average, at 70.6% since 2000. You can find a summary of the taxa included in this index by clicking “Data summary” on the [TSX visualisation tool](#).

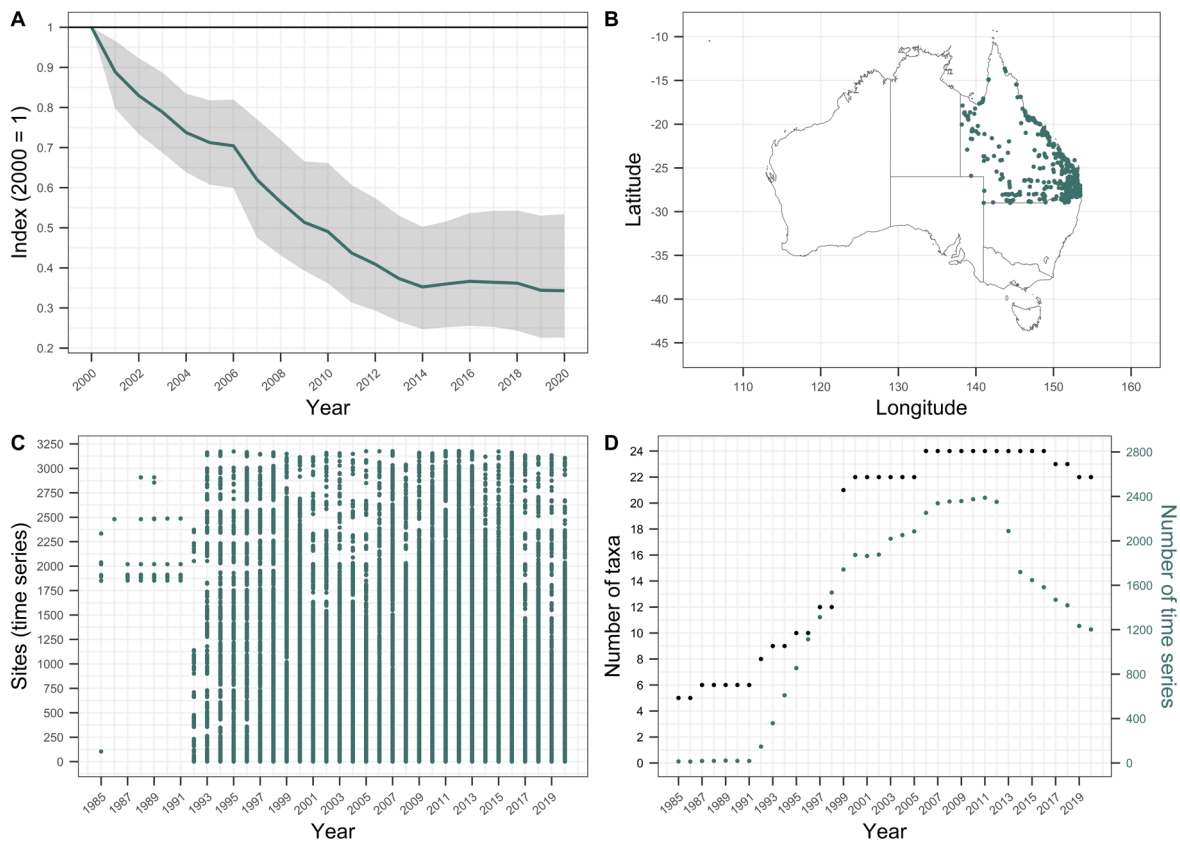


Figure 5. **A)** The 2023 Threatened Bird Index for Queensland based on all data provided on threatened and near-threatened bird taxa. The green line shows the average change in relative abundance compared to the baseline year of 2000 where the index value is set to 1. The shaded areas show the confidence limits. **B)** A map showing where the threatened bird data, submitted to the index, were recorded in Queensland. The green dots indicate repeatedly monitored sites. **C)** A dot plot showing the years for which monitoring data were available to compile the index. Each row represents a time series where a taxa was monitored with a consistent method at a single site in Queensland. **D)** The number of taxa (in black circles) and number of time series (in green circles) used to calculate the Queensland bird index for each year.

Data for New South Wales and the Australian Capital Territory

The overall trend for threatened birds in the New South Wales and the Australian Capital Territory is one of continued decline (**Figure 6A**). Declines were steep between 2000 and 2007, with some stabilisation between 2007 and 2016. However, data acquired since 2016 suggest continued declines through to 2019. The most recent declines are mostly attributed to terrestrial birds (-58.4% since 2000), with some early declines and recent stabilisation apparent in the trends for shoreline (migratory) birds (at around -52.9% since 2000).

NSW+ACT Bird Index - Quick Facts

Reference year	2000
2020 index value	0.437
% change from 2000	-56.3%
Time series	4505
Taxa	35
Av. time-series length	7.8
Data sources	22

The data for New South Wales and the Australian Capital Territory are concentrated in the east of the combined area of these jurisdictions, with less data from western NSW (**Figure 6B**). The number of available taxa and time series increased exponentially from around 1995 (**Figure 6D**). You can find a summary of the taxa included in this index by clicking “Data summary” on the [TSX visualisation tool](#).

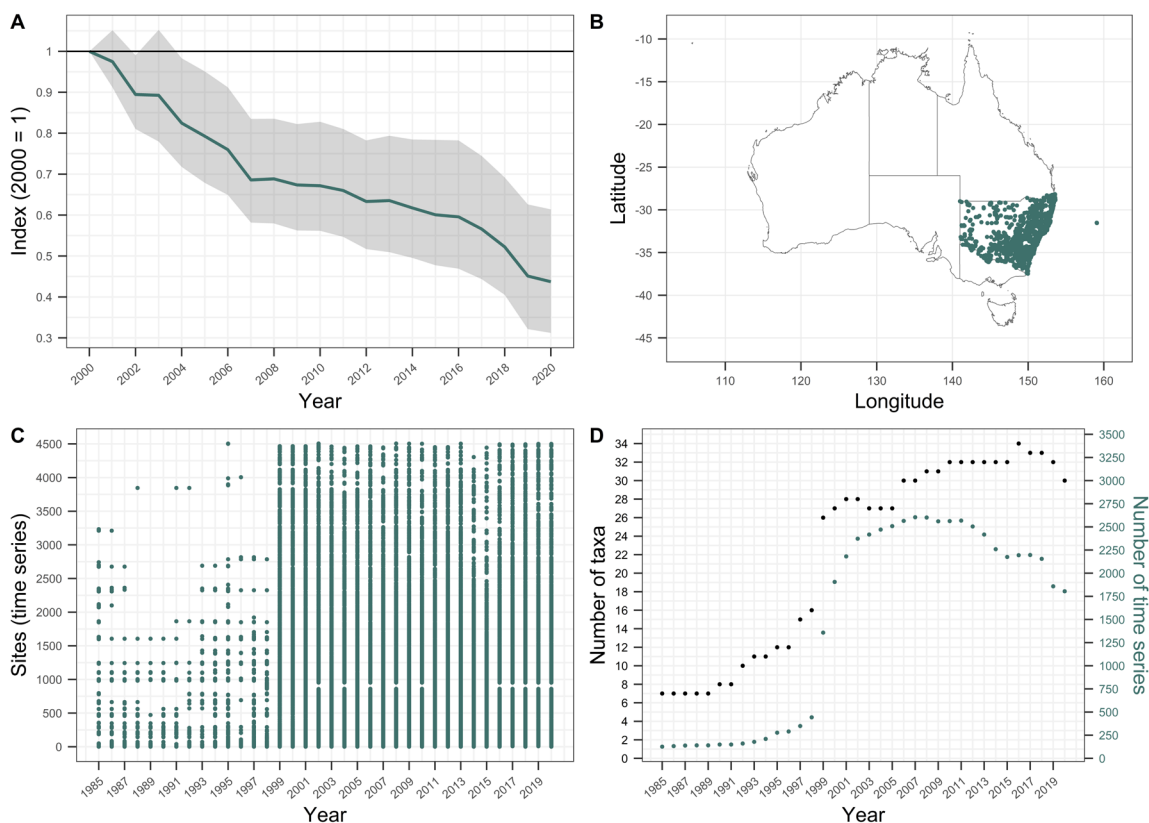


Figure 6. **A)** The 2023 Threatened Bird Index for New South Wales (NSW) and Australian Capital Territory (ACT) based on all data provided on threatened and near-threatened bird taxa. The green line shows the average change in relative abundance compared to the baseline year of 2000 where the index value is set to 1. The shaded areas show the confidence limits. **B)** A map showing where the threatened bird data, submitted to the index, were recorded in NSW + ACT. The green dots indicate repeatedly monitored sites. **C)** A dot plot showing the years for which monitoring data were available to compile the index. Each row represents a time series where a taxa was monitored with a consistent method at a single site in NSW + ACT. **D)** The number of taxa (in black circles) and number of time series (in green circles) used to calculate the NSW +ACT bird index for each year.

Data for Victoria

While the overall trend for Victoria’s threatened birds is one of continued decline, there is considerable interspecific variation, as indicated by the wide confidence limits in **Figure 7A**. Some populations are trending considerably better than the average, while others are trending considerably worse. Trends for terrestrial birds are worse than those for migratory shorebirds overall, with respective index values of 0.419 (58.1% decline) and 0.711 (28.9% decline).

Vic Bird Index - Quick Facts

Reference year	2000
2020 index value	0.521
% change from 2000	-47.9%
Time series	4307
Taxa	32
Av. time-series length	8.1
Data sources	11

The data for Victoria have the highest within-state spatial representativeness of anywhere in the country, covering all major biomes (**Figure 7B**). Data are most sparse for the Alps and Upper Murray. The number of taxa represented each year increased in a roughly linear fashion from 1985, with the number of time series increasing in an exponential fashion. Both have declined in more recent years (**Figure 7C and 7D**). You can find a summary of the taxa included in this index by clicking “Data summary” on the [TSX visualisation tool](#).

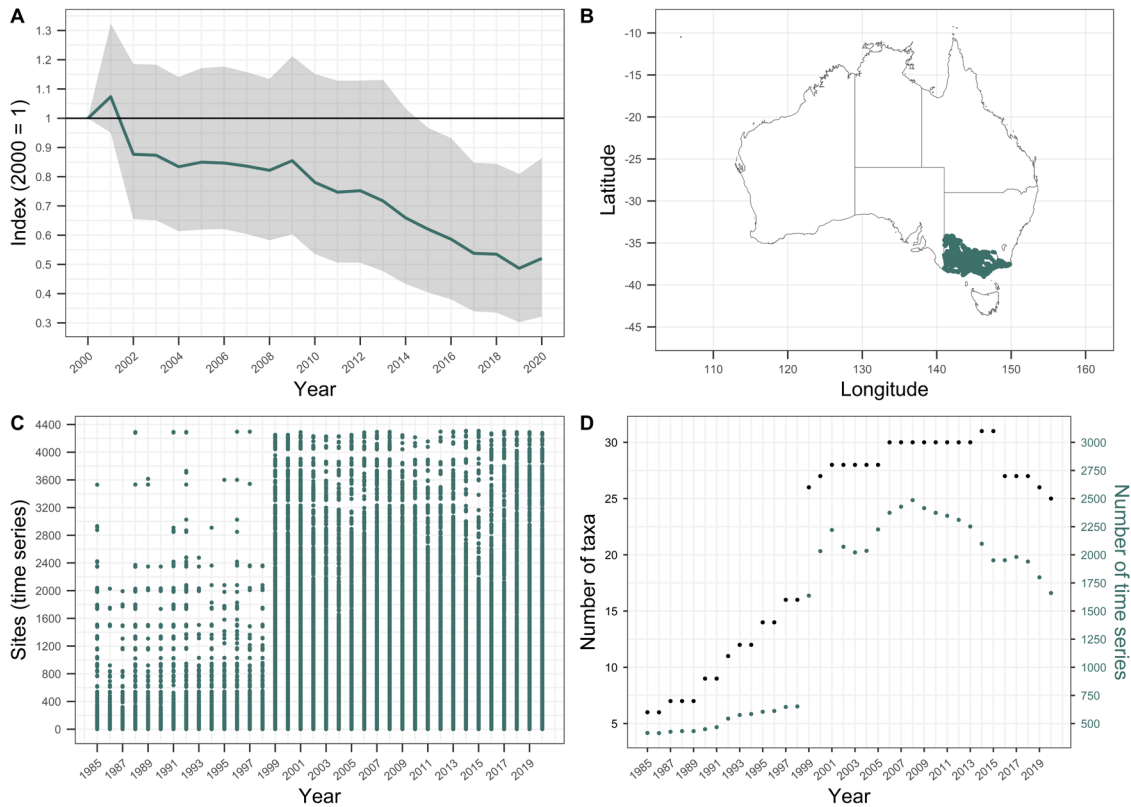


Figure 7. A) The 2023 Threatened Bird Index for Victoria based on all data provided on threatened and near-threatened bird taxa. The green line shows the average change in relative abundance compared to the baseline year of 2000 where the index value is set to 1. The shaded areas show the confidence limits. **B)** A map showing where the threatened bird data, submitted to the index, were recorded in Victoria. The green dots indicate repeatedly monitored sites. **C)** A dot plot showing the years for which monitoring data were available to compile the index. Each row represents a time series where a taxa was monitored with a consistent method at a single site in Victoria. **D)** The number of taxa (in black circles) and number of time series (in green circles) used to calculate the Victoria bird index for each year.

Data for Tasmania

The overall trend for Tasmania’s threatened birds was one of decline from 2000–2011, with some stabilisation since that time (**Figure 8A**). However, the most recent time step of 2019-2020 is suggestive of continuing declines (**Figure 8C and 8D**). There is considerable interspecific variation, as indicated by the wide confidence limits in **Figure 8A**. Trends up to 2019 for marine birds are better than for shoreline migratory birds (12.9% decline vs 31.7% decline since 2000).

Tas Bird Index - Quick Facts

Reference year	2000
2020 index value	0.724
% change from 2000	-27.6%
Time series	376
Taxa	21
Av. time-series length	12.3
Data sources	7

There is good spatial coverage for Tasmania’s bird data (**Figure 8B**), except for the wet forests of the south and west of the State. The number of taxa represented each year and the number of time series increased in a roughly linear fashion from 1985 but has declined in more recent years (**Figure 8C and 8D**). You can find a summary of the taxa included in this index by clicking “Data summary” on the [TSX visualisation tool](#).

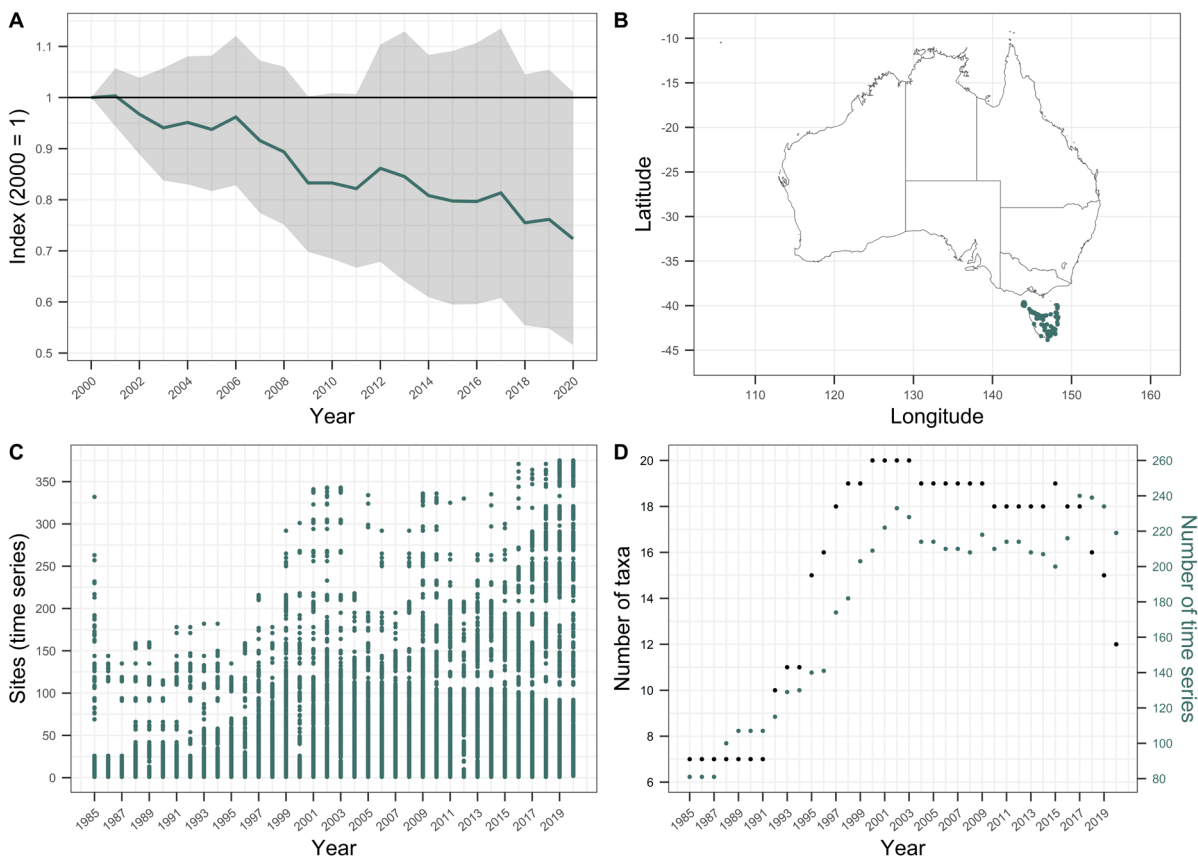


Figure 8. A) The 2023 Threatened Bird Index for Tasmania based on all data provided on threatened and near-threatened bird taxa. The green line shows the average change in relative abundance compared to the baseline year of 2000 where the index value is set to 1. The shaded areas show the confidence limits. **B)** A map showing where the threatened bird data, submitted to the index, were recorded in Tasmania. The green dots indicate repeatedly monitored sites. **C)** A dot plot showing the years for which monitoring data were available to compile the index. Each row represents a time series where a taxa was monitored with a consistent method at a single site in Tasmania. **D)** The number of taxa (in black circles) and number of time series (in green circles) used to calculate the Tasmania bird index for each year.

Data for South Australia

Unsurprisingly, the majority of monitoring sites in South Australia from which the TSX has received data are in the south-east, with few datasets in the semi-arid and arid parts of the state (**Figure 9B**). The overall trend entails steep declines from the reference year of 2000 through to 2006, with a consistently linear (but slower) pattern of declines from 2006 onwards.

SA Bird Index - Quick Facts	
Reference year	2000
2020 index value	0.304
% change from 2000	-69.6%
Time series	2165
Taxa	28
Av. time-series length	8.3
Data sources	11

For birds in SA, the number of taxa represented each year in the index increased in a roughly linear fashion from 1985 through to the turn of the century, peaking at around 2007 (**Figure 9C and 9D**). The number of time series available for each year of the index increased steeply from 1998 to 2008 and has declined since that time (**Figure 9D**). You can find a summary of the taxa included in this index by clicking “Data summary” on the [TSX visualisation tool](#).

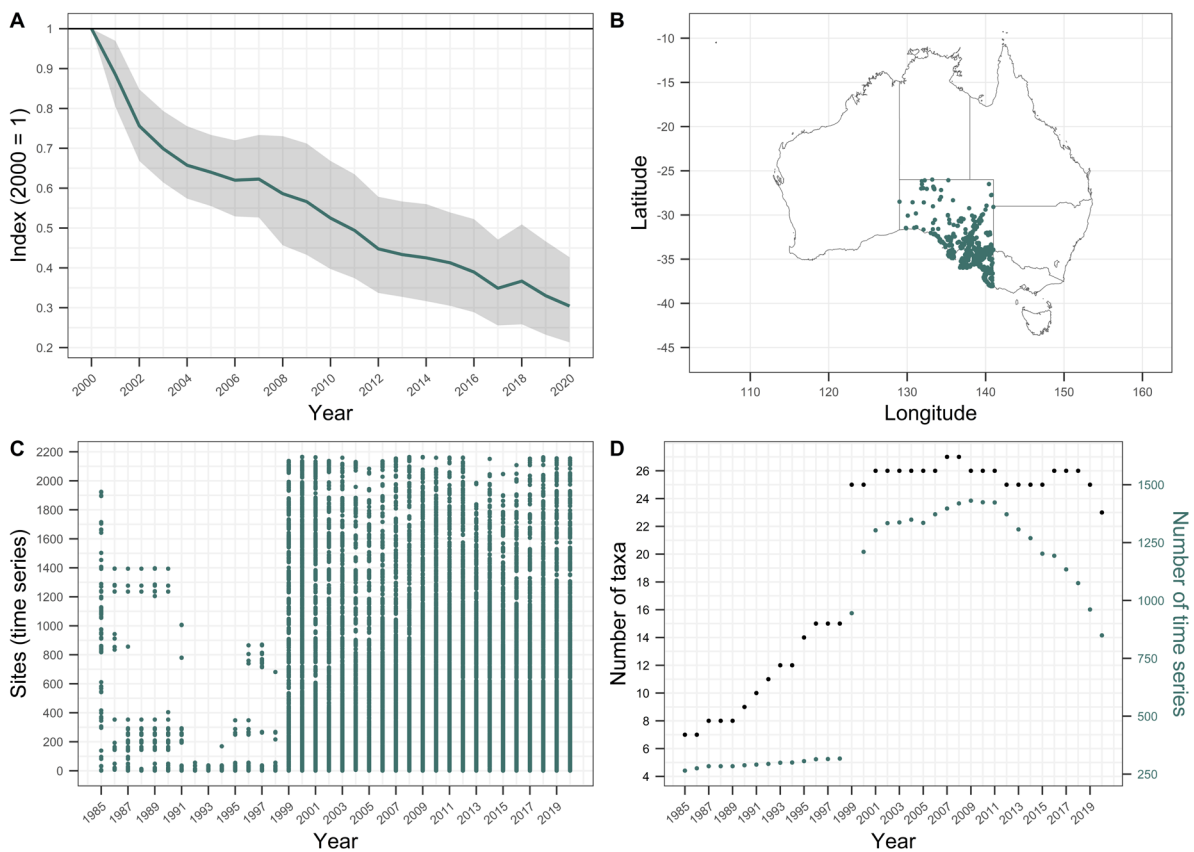


Figure 9. **A)** The 2023 Threatened Bird Index for South Australia based on all data provided on threatened and near-threatened bird taxa. The green line shows the average change in relative abundance compared to the baseline year of 2000 where the index value is set to 1. The shaded areas show the confidence limits. **B)** A map showing where the threatened bird data, submitted to the index, were recorded in South Australia. The green dots indicate repeatedly monitored sites. **C)** A dot plot showing the years for which monitoring data were available to compile the index. Each row represents a time series where a taxa was monitored with a consistent method at a single site in South Australia. **D)** The number of taxa (in black circles) and number of time series (in green circles) used to calculate the South Australia bird index for each year.

Data for Western Australia

Unsurprisingly for such a large state, there are limited monitoring data for some regions in WA. The data underlying the WA bird index have good coverage for the Perth area, Kimberley, and south-central and southwest coastal areas (**Figure 10B**). There is considerable interspecific variation in the trend for birds in WA, however, declines are clear from 2014 onwards.

WA Bird Index - Quick Facts

Reference year	2000
2020 index value	0.701
% change from 2000	-29.9%
Time series	2742
Taxa	23
Av. time-series length	7.3
Data sources	12

Both the number of sites and the number of taxa being monitored in WA has substantially increased since around 1999, peaking at around 2014 (**Figure 10C and 10D**). In combination, this has resulted in a significant increase in the time series available for calculating the index (**Figure 10D**). You can find a summary of the taxa included in this index by clicking “Data summary” on the [TSX visualisation tool](#).

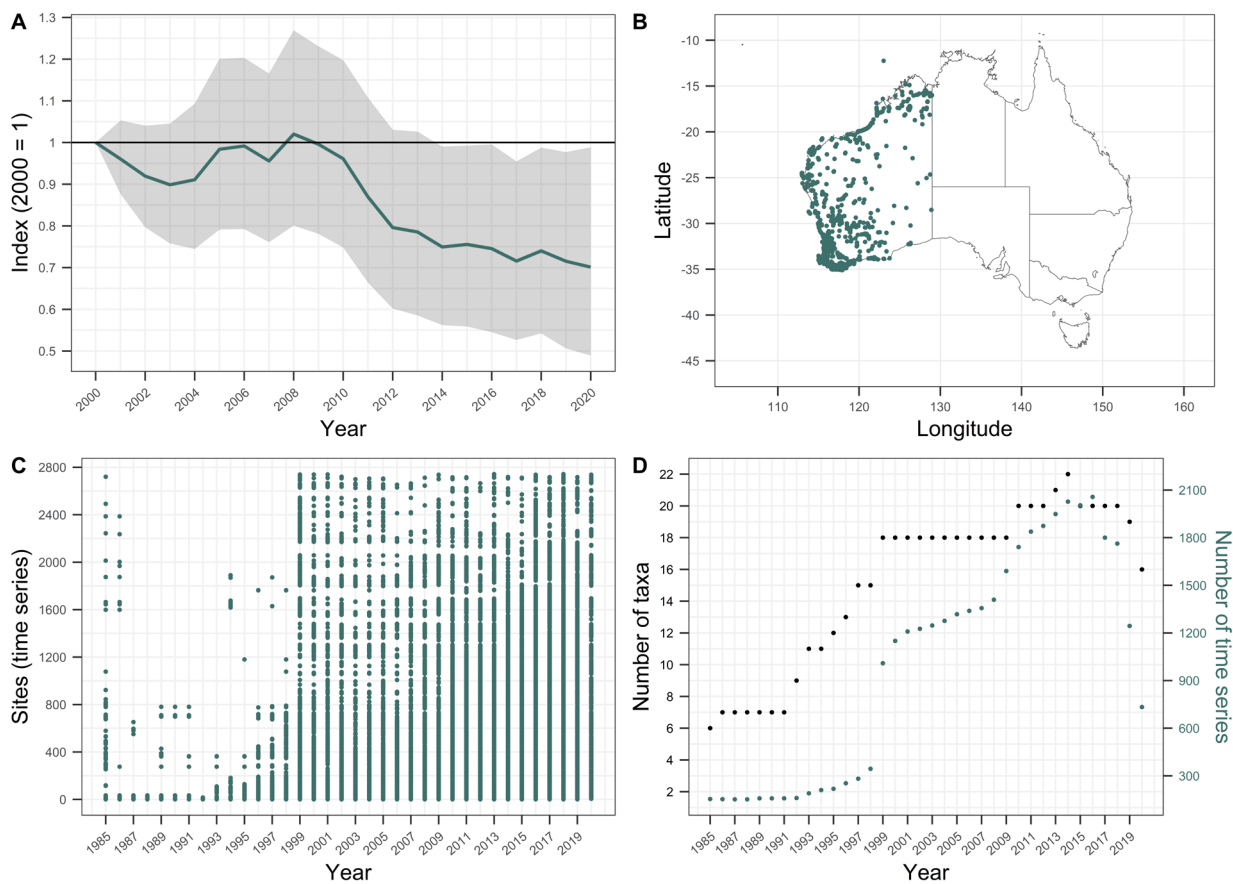


Figure 10. **A)** The 2023 Threatened Bird Index for Western Australia based on all data provided on threatened and near-threatened bird taxa. The green line shows the average change in relative abundance compared to the baseline year of 2000 where the index value is set to 1. The shaded areas show the confidence limits. **B)** A map showing where the threatened bird data, submitted to the index, were recorded in Western Australia. The green dots indicate repeatedly monitored sites. **C)** A dot plot showing the years for which monitoring data were available to compile the index. Each row represents a time series where a taxa was monitored with a consistent method at a single site in Western Australia. **D)** The number of taxa (in black circles) and number of time series (in green circles) used to calculate the Western Australia bird index for each year.

Data for the Northern Territory

The data underlying the NT bird index have higher coverage in the north and south of the territory but are limited for central regions of the semi-arid and arid zones (**Figure 11B**). 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 taxa by 1999 and remaining stable since (**Figure 11C and 11D**). The number of time series included reached a peak in 2010.

NT Bird Index - Quick Facts

Reference year	2000
2020 index value	0.966
% change from 2000	-3.4%
Time series	432
Taxa	18
Av. time-series length	7.7
Data sources	6

If we subset the NT bird index to look at trends for specific groups, we see mixed results. For the five NT terrestrial birds for which we have data, we see a severe average decline of 61% between 2000 and 2002 followed by what appears to be some consistent stabilisation. For the same time period, but looking at migratory shorebirds (13 taxa), we see quite a fluctuating trend, suggesting that data on migratory shorebirds is driving the trend for Northern Territory. You can find a summary of the taxa included in this index by clicking “Data summary” on the [TSX visualisation tool](#).

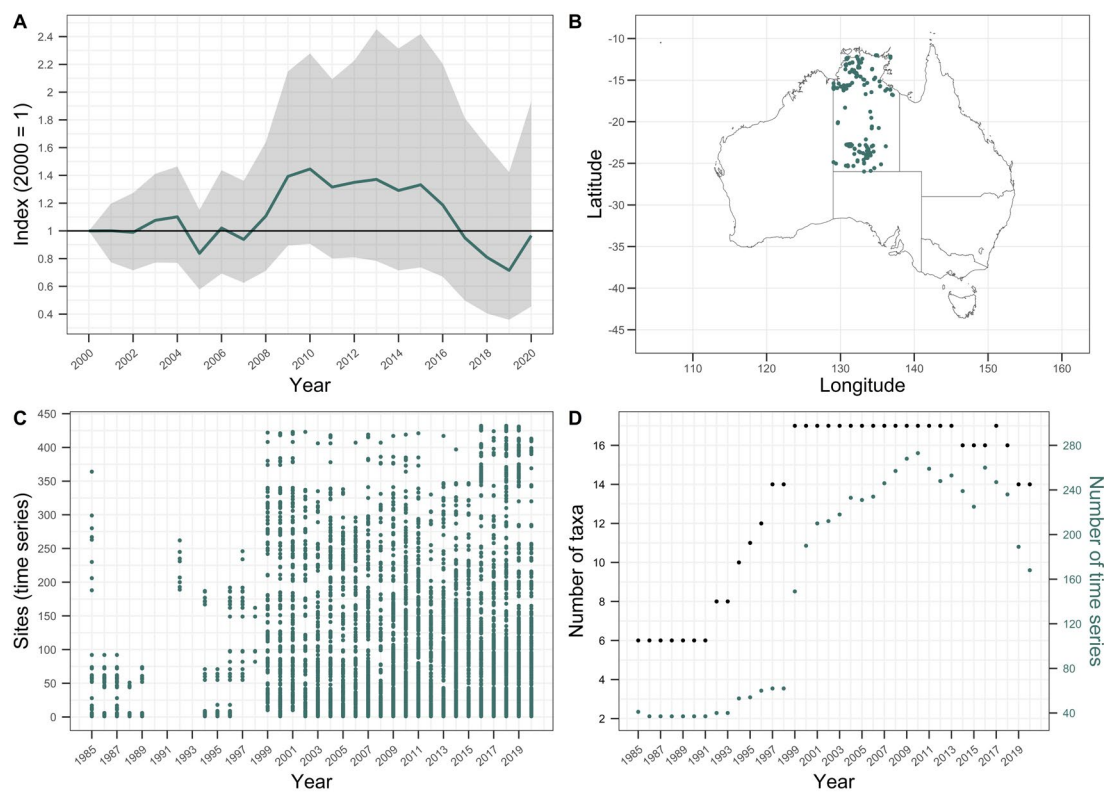


Figure 11. **A)** The 2023 Threatened Bird Index for the Northern Territory based on all data provided on threatened and near-threatened bird taxa. The green line shows the average change in relative abundance compared to the baseline year of 2000 where the index value is set to 1. The shaded areas show the confidence limits. **B)** A map showing where the threatened bird data, submitted to the index, were recorded in the Northern Territory. The green dots indicate repeatedly monitored sites. **C)** A dot plot showing the years for which monitoring data were available to compile the index. Each row represents a time series where a taxa was monitored with a consistent method at a single site in the Northern Territory. **D)** The number of taxa (in black circles) and number of time series (in green circles) used to calculate the Northern Territory bird index for each year.

Appendix

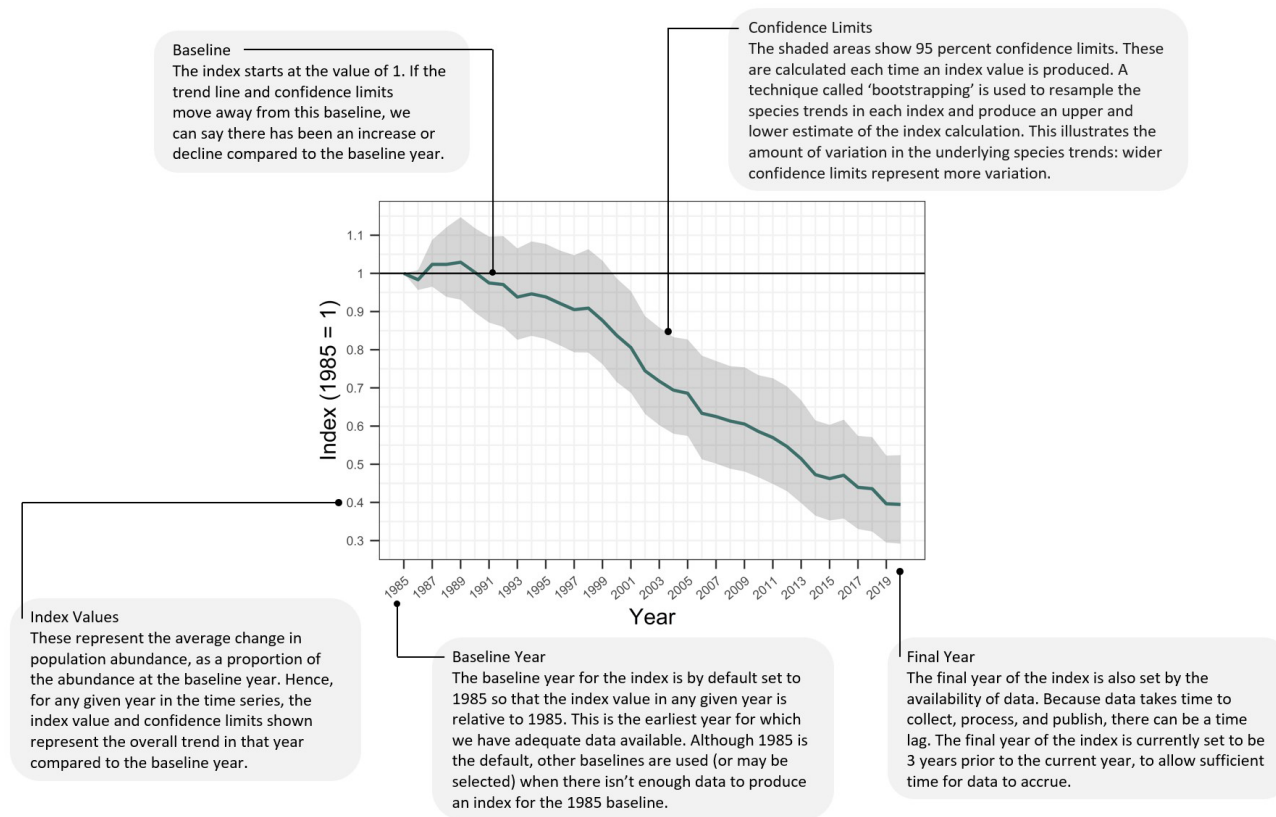


Figure A1. This illustration explains how to interpret the Threatened Bird Index trend graphs. It briefly explains the time period displayed and what the confidence limits and index values show.

Table A1. National trends for migratory shorebirds based on 1985, 1990, 1995 and 2000 reference years with details on the number of taxa and the number of time series available for index calculation at each reference year. Percentage values provided within parentheses indicate the proportion of all listed taxa represented in the index at the reference year for each index.

Reference year	Percent change since reference year	Number of migratory shorebird taxa at the reference year	Number of time series at the reference year
1985	-63.4%	7 (29%)	1090
1990	-61.6%	7 (29%)	1179
1995	-58.5%	11 (46%)	2370
2000	-42.5%	13 (54%)	4072

Table A2. Bird taxa currently included in the 2023 Threatened Bird Index. National Priority Species are bolded.

Taxon name	Taxon scientific name	Functional group	IUCN status	EPBC status	2020 Bird Action Plan status	# data sources	# time series	Mean time-series length
Abbott's Booby	<i>Papasula abbotti</i>	Marine	Endangered	Endangered	Vulnerable	1	455	5.0
Alaskan Bar-tailed Godwit	<i>Limosa lapponica baueri</i>	Shoreline (migratory)	Near Threatened	Vulnerable	Endangered	1	573	18.0

Taxon name	Taxon scientific name	Functional group	IUCN status	EPBC status	2020 Bird Action Plan status	# data sources	# time series	Mean time-series length
Alligator Rivers Yellow Chat	<i>Epthianura crocea tunneyi</i>	Terrestrial	Least Concern	Endangered	Endangered	1	1	2.0
Australasian Bittern	<i>Botaurus poiciloptilus</i>	Wetland	Vulnerable	Endangered	Endangered	1	2	4.0
Australian Fairy Tern	<i>Sternula nereis nereis</i>	Marine	Vulnerable	Vulnerable	Vulnerable	1	53	8.3
Australian Gould's Petrel	<i>Pterodroma leucoptera leucoptera</i>	Marine	Vulnerable	Endangered	Endangered	1	1	13.0
Baudin's Black-Cockatoo	<i>Zanda baudinii</i>	Terrestrial	Critically Endangered	Endangered	Critically Endangered	1	77	5.9
Black-browed Albatross	<i>Thalassarche melanophris</i>	Marine	Least Concern	Vulnerable	Least Concern	2	5	37.4
Black-eared Miner	<i>Manorina melanotis</i>	Terrestrial	Endangered	Endangered	Endangered	2	103	13.9
Black-tailed Godwit	<i>Limosa limosa</i>	Shoreline (migratory)	Near Threatened	-	-	2	280	21.6
Capricorn Yellow Chat	<i>Epthianura crocea macgregori</i>	Terrestrial	Least Concern	Critically Endangered	Endangered	1	14	9.6
Carnaby's Black-Cockatoo	<i>Zanda latirostris</i>	Terrestrial	Endangered	Endangered	Endangered	1	206	7.0
Christmas Island Goshawk	<i>Accipiter fasciatus natalis</i>	Terrestrial	Least Concern	Endangered	Endangered	1	225	5.6
Christmas Island Grey-capped Emerald-Dove	<i>Chalcophaps indica natalis</i>	Terrestrial	Least Concern	Endangered	Endangered	1	417	6.5
Christmas Island Thrush	<i>Turdus poliocephalus erythropleurus</i>	Terrestrial	Least Concern	Endangered	Least Concern	1	998	5.5
Common Greenshank	<i>Tringa nebularia</i>	Shoreline (migratory)	Least Concern	-	Vulnerable	2	861	20.2
Curlew Sandpiper	<i>Calidris ferruginea</i>	Shoreline (migratory)	Near Threatened	Critically Endangered	Endangered	2	730	21.9
Diamond Firetail	<i>Stagonopleura guttata</i>	Terrestrial	Vulnerable	Vulnerable	Vulnerable	1	1035	10.1
Dirk Hartog White-winged Fairy-wren	<i>Malurus leucopterus leucopterus</i>	Terrestrial	Least Concern	Vulnerable	Least Concern	1	12	2.0
Eastern Ground Parrot	<i>Pezoporus wallicus wallicus</i>	Terrestrial	Least Concern	-	Near Threatened	4	50	4.0
Eastern Major Mitchell's Cockatoo	<i>Cacatua leadbeateri leadbeateri</i>	Terrestrial	Least Concern	Endangered	Endangered	1	293	12.3
Eastern Regent Parrot	<i>Polytelis anthopeplus monarchoides</i>	Terrestrial	Least Concern	Vulnerable	Vulnerable	2	161	10.9

Taxon name	Taxon scientific name	Functional group	IUCN status	EPBC status	2020 Bird Action Plan status	# data sources	# time series	Mean time-series length
Far Eastern Curlew	<i>Numenius madagascariensis</i>	Shoreline (migratory)	Endangered	Critically Endangered	Endangered	2	686	15.8
Flesh-footed Shearwater	<i>Ardenna carneipes</i>	Marine	Near Threatened	-	Near Threatened	1	6	25.0
Forest Red-tailed Black-Cockatoo	<i>Calyptorhynchus banksii naso</i>	Terrestrial	Least Concern	Vulnerable	Vulnerable	1	197	4.2
Gang-gang Cockatoo	<i>Callocephalon fimbriatum</i>	Terrestrial	Vulnerable	Endangered	Vulnerable	1	1126	9.3
Gouldian Finch	<i>Chloebia gouldiae</i>	Terrestrial	Least Concern	Endangered	Least Concern	3	114	12.4
Gould's Petrel	<i>Pterodroma leucoptera</i>	Marine	Vulnerable	-	-	1	2	3.5
Great Knot	<i>Calidris tenuirostris</i>	Shoreline (migratory)	Endangered	Critically Endangered	Near Threatened	2	437	15.3
Greater Sand Plover	<i>Charadrius leschenaultii</i>	Shoreline (migratory)	Least Concern	Vulnerable	-	2	347	14.4
Grey Petrel	<i>Procellaria cinerea</i>	Marine	Near Threatened	-	Near Threatened	1	15	3.1
Grey-headed Albatross	<i>Thalassarche chrysostoma</i>	Marine	Endangered	Endangered	Endangered	1	1	25.0
Helmeted Honeyeater	<i>Lichenostomus melanops cassidix</i>	Terrestrial	Least Concern	Critically Endangered	Critically Endangered	1	2	25.5
Houtman Abrolhos Lesser Noddy	<i>Anous tenuirostris melanops</i>	Marine	Least Concern	Vulnerable	Vulnerable	1	8	17.9
Kangaroo Island Glossy Black-Cockatoo	<i>Calyptorhynchus lathamii halmaturinus</i>	Terrestrial	Vulnerable	Endangered	Endangered	2	23	9.6
Lesser Sand Plover	<i>Charadrius mongolus</i>	Shoreline (migratory)	Least Concern	Endangered	-	2	416	20.2
Light-mantled Sooty Albatross	<i>Phoebastria palpebrata</i>	Marine	Near Threatened	-	Least Concern	1	7	20.0
Lord Howe Pied Currawong	<i>Strepera graculina crissalis</i>	Terrestrial	Least Concern	Vulnerable	Endangered	1	1	4.0
Lord Howe Woodhen	<i>Hypotaenidia sylvestris</i>	Terrestrial	Endangered	Endangered	Endangered	1	1	24.0
Mallee Emu-wren	<i>Stipiturus mallee</i>	Terrestrial	Endangered	Endangered	Endangered	1	25	10.0
Malleefowl	<i>Leipoa ocellata</i>	Terrestrial	Vulnerable	Vulnerable	Vulnerable	2	169	16.1
Murray Mallee Striated Grasswren	<i>Amytornis striatus howei</i>	Terrestrial	Least Concern	Endangered	Endangered	1	33	19.6
Northern Eastern Bristlebird	<i>Dasyornis brachypterus monoides</i>	Terrestrial	Vulnerable	Endangered	Critically Endangered	1	36	11.7
Northern Giant-Petrel	<i>Macronectes halli</i>	Marine	Least Concern	Vulnerable	Least Concern	1	17	17.2

Taxon name	Taxon scientific name	Functional group	IUCN status	EPBC status	2020 Bird Action Plan status	# data sources	# time series	Mean time-series length
Northern Rufous Scrub-bird	<i>Atrichornis rufescens rufescens</i>	Terrestrial	Endangered	Endangered	Endangered	2	37	10.9
Orange-bellied Parrot	<i>Neophema chrysogaster</i>	Terrestrial	Critically Endangered	Critically Endangered	Critically Endangered	1	7	28.3
Painted Honeyeater	<i>Grantiella picta</i>	Terrestrial	Least Concern	Vulnerable	Least Concern	1	199	11.4
Plains-wanderer	<i>Pedionomus torquatus</i>	Terrestrial	Endangered	Critically Endangered	Critically Endangered	3	4	11.8
Red Knot	<i>Calidris canutus</i>	Shoreline (migratory)	Near Threatened	Endangered	-	2	375	16.6
Red-lored Whistler	<i>Pachycephala rufogularis</i>	Terrestrial	Vulnerable	Vulnerable	Vulnerable	1	46	8.9
Red-necked Stint	<i>Calidris ruficollis</i>	Shoreline (migratory)	Near Threatened	-	Near Threatened	2	1065	19.5
Sharp-tailed Sandpiper	<i>Calidris acuminata</i>	Shoreline (migratory)	Vulnerable	-	Vulnerable	2	764	15.7
Shy Albatross	<i>Thalassarche cauta</i>	Marine	Near Threatened	Endangered	Near Threatened	2	3	12.3
South-east Southern Whiteface	<i>Aphelocephala leucopsis leucopsis</i>	Terrestrial	Vulnerable	Vulnerable	Vulnerable	1	1069	10.0
South-eastern Boobook	<i>Ninox boobook boobook</i>	Terrestrial	Least Concern	-	Near Threatened	1	1313	11.2
South-eastern Brown Treecreeper	<i>Climacteris picumnus victoriae</i>	Terrestrial	Least Concern	Vulnerable	Vulnerable	2	1681	9.8
South-eastern Hooded Robin	<i>Melanodryas cucullata cucullata</i>	Terrestrial	Least Concern	Endangered	Vulnerable	1	961	10.7
Southern Black-throated Finch	<i>Poephila cincta cincta</i>	Terrestrial	Least Concern	Endangered	Endangered	1	23	6.9
Southern Eastern Bristlebird	<i>Dasyornis brachypterus brachypterus</i>	Terrestrial	Vulnerable	Endangered	Near Threatened	2	90	7.8
Southern Giant-Petrel	<i>Macronectes giganteus</i>	Marine	Least Concern	Endangered	Least Concern	2	11	36.7
Southern Rufous Scrub-bird	<i>Atrichornis rufescens ferrieri</i>	Terrestrial	Endangered	Endangered	Endangered	2	12	10.9
Southern Yellow-throated Scrubwren	<i>Sericornis citreogularis citreogularis</i>	Terrestrial	Least Concern	-	Near Threatened	1	243	10.3
South-west Southern Whiteface	<i>Aphelocephala leucopsis castaneiventris</i>	Terrestrial	Vulnerable	Vulnerable	Vulnerable	1	99	10.8
Strong-billed Honeyeater	<i>Melithreptus validirostris</i>	Terrestrial	Vulnerable	-	Vulnerable	1	94	3.6
Superb Parrot	<i>Polytelis swainsonii</i>	Terrestrial	Least Concern	Vulnerable	Least Concern	1	356	10.7

Taxon name	Taxon scientific name	Functional group	IUCN status	EPBC status	2020 Bird Action Plan status	# data sources	# time series	Mean time-series length
Terek Sandpiper	<i>Xenus cinereus</i>	Shoreline (migratory)	Least Concern	-	Vulnerable	2	360	16.6
Wandering Albatross	<i>Diomedea exulans</i>	Marine	Vulnerable	Vulnerable	Critically Endangered	1	1	57.0
Western Boobook	<i>Ninox boobook ocellata</i>	Terrestrial	Least Concern	-	Near Threatened	1	548	12.6
Western Ground Parrot	<i>Pezoporus wallicus flaviventris</i>	Terrestrial	Least Concern	Critically Endangered	Critically Endangered	1	2	9.0
Western Kermadec Petrel	<i>Pterodroma neglecta neglecta</i>	Marine	Least Concern	Vulnerable	Vulnerable	1	1	4.0
Western Purple-crowned Fairy-wren	<i>Malurus coronatus coronatus</i>	Terrestrial	Least Concern	Endangered	Vulnerable	1	9	13.7
Yakutian Bar-tailed Godwit	<i>Limosa lapponica menzbieri</i>	Shoreline (migratory)	Near Threatened	Critically Endangered	Endangered	1	220	15.7

Table A3. Bird taxa currently included in the 2023 Threatened Bird Index as listed according to EPBC Act, IUCN Red List, and The Action Plan for Australian Birds 2020. The proportion of all listed taxa represented in the index is also provided.

	EPBC Act	IUCN Red List	The Action Plan for Australian Birds 2020	All listings
Total number of taxa	58	39	58	72
Proportion of all listed taxa represented*	35%	27%	27%	26%

* This value excludes Extinct taxa that are not eligible for inclusion in the index.

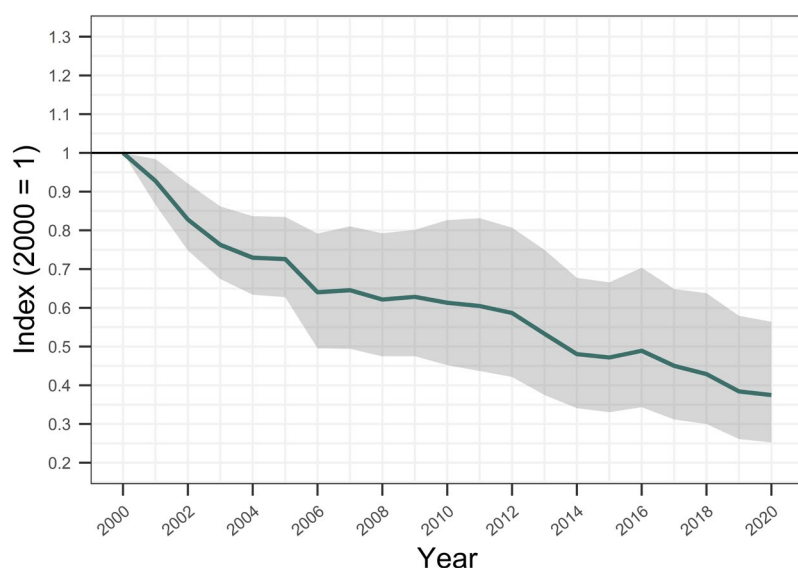


Figure A2. The trend for **terrestrial bird** species between 2000 and 2020. The green line shows the average change in relative abundance compared to the baseline year of 2000 where the index value is set to 1. The shaded areas show the confidence limits.

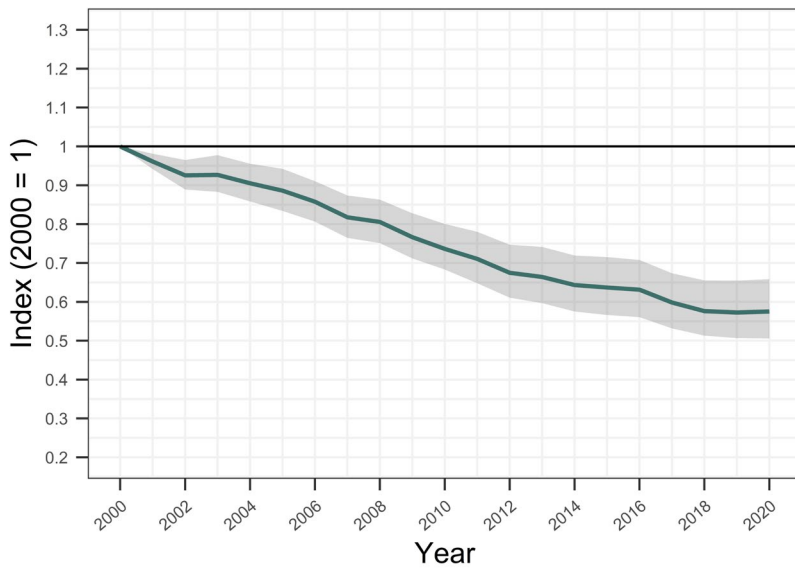


Figure A3. The trend for **migratory shorebird** species between 2000 and 2020. The green line shows the average change in relative abundance compared to the baseline year of 2000 where the index value is set to 1. The shaded areas show the confidence limits.

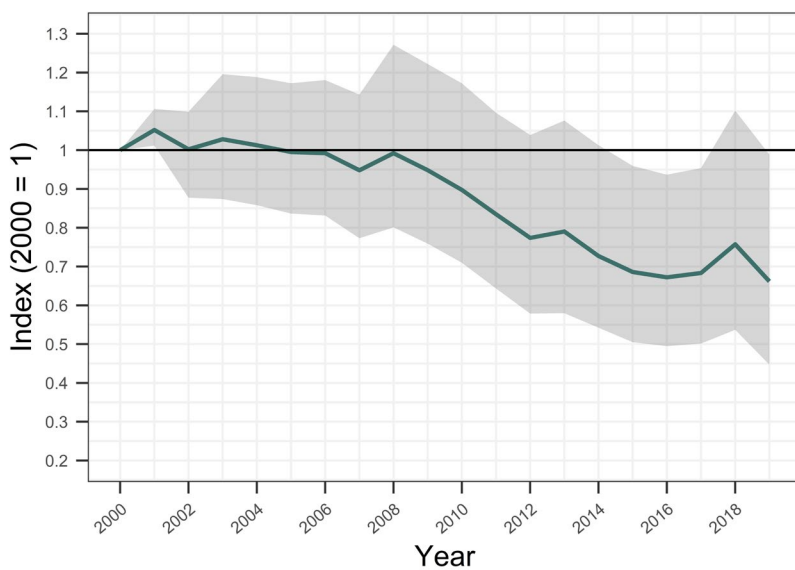


Figure A4. The trend for **marine bird** species between 2000 and 2020. The green line shows the average change in relative abundance compared to the baseline year of 2000 where the index value is set to 1. The shaded areas show the confidence limits.

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