AUSTRALIA'S IMPORTANT BIRD AREAS

Key sites for bird conservation

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Birds Australia
CONSERVATION THROUGH KNOWLEDGE

BirdLife INTERNATIONAL

RioTinto

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Contents

Australia's Important Bird Areas: A Report

Australia's 314 Important Bird Areas (IBAs) are among Earth's most exceptional places for birds and are priority sites for bird conservation. By conserving these key areas, Australians can be more confident of the long-term survival of our birds. In this report, Birds Australia presents the results of a three year project to identify Australia's IBAs. The project owes its success to the contributions of over 1,000 volunteers.

Almost half of the area covered by Australia's IBAs has no existing formal protection, thus representing an opportunity for conservation. Most of Australia's IBAs face challenges such as invasive species, development pressure, overgrazing and inappropriate fire regimes, thus presenting a need for management. In only a very small number of IBAs were no challenges identified.

Between 2005 and 2009, the IBA project designated 314 Australian sites of global significance for bird conservation. These sites encompass almost 44 million hectares of land, which include:

- IBAs in all Australian States and most Territories.
- Almost 26 million hectares of habitat in 167 IBAs designated for globally threatened species (some IBAs are designated for more than one threatened species).
- 121 IBAs in 31 million hectares designated for restricted-range (endemic) species.
- More than ten and a half million hectares of habitat in 171 IBAs designated for congregations of waterbirds, including shorebirds.
- 98 IBAs designated at least partly for congregations of seabirds.
- 87 island IBAs designated mostly for seabirds.

Australia's IBAs are concentrated in heavily cleared and fragmented landscapes, along coasts and on islands. All major forms of land ownership are represented. For communities, organisations, industry and all levels of government, this provides a wealth of opportunity for involvement in the conservation and monitoring of Australia's birds in the places where it matters most.

'Australia can hold its head high in the BirdLife International community, now that we have identified and documented our Important Bird Areas (IBAs). In the 314 IBAs we have a national network of globally significant sites for bird conservation, providing a focus for research and conservation efforts. Thanks to Rio Tinto for their generous support, BirdLife International staff for their advice and encouragement, and Dr Guy Dutson and the team who contributed their time, knowledge and enthusiasm.'

Graeme Hamilton, CEO, Birds Australia

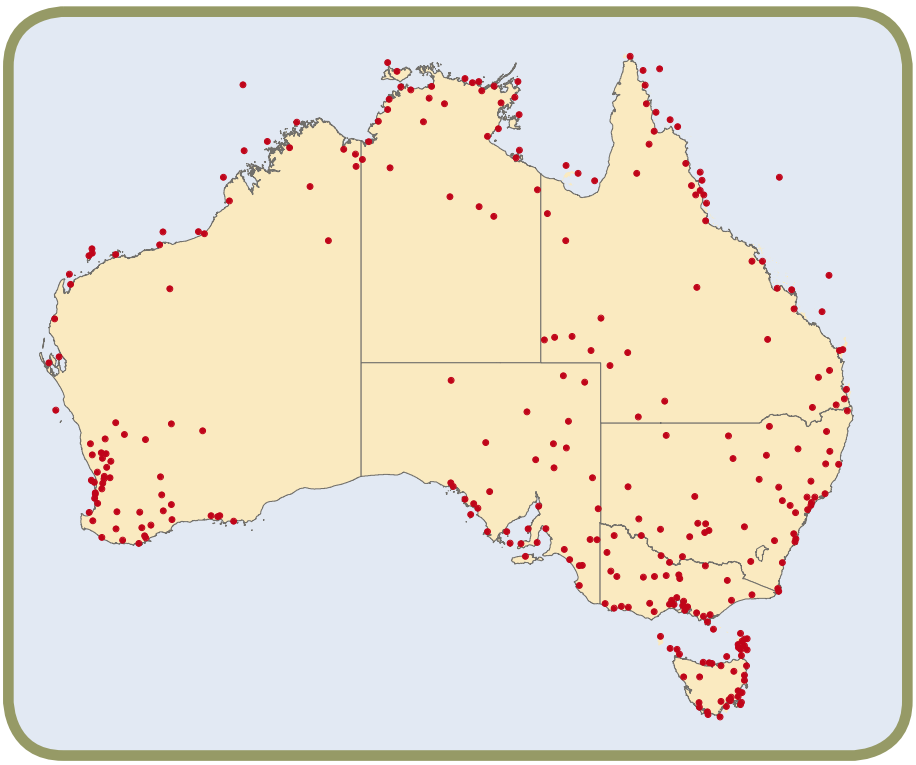
'The Important Bird Area (IBA) program contributes significantly to Australia's biodiversity conservation through building knowledge of birds and their threats as well as identifying conservation solutions. This provides value to both policy makers and land managers. Congratulations to Birds Australia and its large network of committed volunteers who have enabled Australia's IBAs to be identified and documented in this impressive report.'

Steven Creese, Managing Director, Rio Tinto Australia

Right: Graeme Hamilton. Photo by **Jennifer Sutfin**

Right: Steven Creese. Photo courtesy of **Rio Tinto**

What are Important Bird Areas?



Above: **Australia's Important Bird Areas.**
Important Bird Areas (IBAs) are identified through the use of globally agreed criteria. Between 2005 and 2009, 314 IBAs were identified in Australia. They represent sites of critical conservation for Australia's birds. IBAs in remote oceanic islands are not included on this map.

Important Bird Areas (IBAs) are sites that are recognised as internationally important for bird conservation and known to support key bird species. In a partnership project funded by Rio Tinto, between 2005 and 2009 Birds Australia identified and selected Australia's IBAs. To date, 314 sites have been designated as among the most important for birds on this planet. This report summarises the results of the project.

Birds and other elements of biodiversity are not distributed evenly. The IBA program was developed by BirdLife International to identify the most important areas on Earth for birds, to promote their significance for conservation and to assist the prioritisation of conservation efforts and resources. IBAs are areas known to support key or 'trigger' bird species, as defined by global scientific criteria. IBA boundaries are defined by these trigger species and their habitat.

IBAs are specific sites

IBAs are sites: they are distinct areas or places that differ from surrounding areas and can potentially be managed as a single unit. They greatly vary in size. For example, some IBAs supporting colonies of nesting seabirds are less than one hectare in extent, while some are very large. Ten Australian IBAs each exceed one million hectares, the largest being the 2.6 million hectare South-west Slopes IBA in New South Wales. In general, conservation actions are best directed at these individual sites, but in some instances species-specific management will also be necessary.

IBAs are non-government and non-statutory

IBAs are non-governmental and have been used across the world as a complementary process to governmental conservation. In Australia, IBAs are identified and designated by Birds Australia. The IBA identification process is totally independent of government. While this means that IBA designation has no statutory status or legal implications and is not designed to have any, it provides a means of communicating the high conservation value of IBAs to the land managers responsible for them.

The IBA process is ongoing

The information in this report was current in June 2009. In the future, other sites that meet IBA criteria may come to attention and with additional information more species at existing IBAs may be found to meet the criteria. Conversely, some existing IBAs may lose their values if the threats to them are not addressed, or they become lower priorities for conservation if the 'trigger' species (the species of interest) become more common. The database and websites will be updated regularly to correct any errors but other revisions will be undertaken at longer intervals.

Below: Diamantina Floodplain IBA in Queensland.
Photo by **Roger Jaensch (Wetlands International)**

Why identify Important Bird Areas?

IBAs have been selected to identify priority places for bird conservation. They are of interest to communities because they have been identified in close collaboration with local experts, and they are a resource for researchers, governments and policy-makers because they are based on best practice interpretation of extensive knowledge about Australian birds. IBAs are promoted by Birds Australia because they can help focus and facilitate conservation action in the country's most important bird sites.

Australia's birds are threatened

Australia is one of the most important countries in the world for birds and biodiversity. It supports 803 bird species, of which 312 are endemic (found nowhere else in the world) and is also globally important for many species of waterbirds, shorebirds and seabirds that are shared with neighbouring countries and regions. Australia is ranked fourteenth in the world for the number of globally threatened bird species and restricted-range species (those with small geographical ranges) that occur here.

Many Australian birds are under threat and a great number continue to decline. Some are close to extinction. Information is sometimes poor, but the 2008 *The State of Australia's Birds* report (available online at www.birdsaustralia.com.au/soab/state-of-australias-birds.html) suggests that about two-thirds of our bird species are showing significant long-term declines. The 2009 *IUCN/BirdLife Red List* classifies four Australian species as globally Critically Endangered, 18 as Endangered and 25 as Vulnerable. Action is required if we are to arrest and reverse the trajectory of continued threat and decline.

Australia lacks site-based conservation priorities

In some countries such as the United Kingdom, all sites of conservation significance have been identified. Until now, the scale of the task and the inadequacy of baseline distributional data have discouraged such projects in Australia and the lack of mapped priority areas, especially those off-reserve, has been a hindrance to effective and cost-efficient conservation. The IBA project is the first national site-scale conservation analysis for the country. The most important places for birds are identified and then mapped using a site-scale analysis.

Why birds?

While site-scale mapping ideally encompasses all biodiversity, birds are the only organisms for which we have adequate information about distribution across the whole of Australia. Birds can often be used as indicators of wider biodiversity values. This relationship is strongest for islands and in areas such as south-eastern Australia. The popularity and visibility of many birds also make them useful flagship species because their conservation is supported by large numbers of people.

A tool in the conservation toolbox

IBAs have proved to be a useful conservation tool in other countries, and Birds Australia has, with Rio Tinto support, worked to implement this tool in Australia. Rio Tinto has also worked elsewhere in partnership with BirdLife International. In some developing countries, IBAs provide the only objective framework for national, site-based biodiversity conservation action. In Europe, and in countries like the USA, IBAs have been used to lobby successfully for off-reserve conservation agreements with private landholders. IBAs have also become a focus for local management action by landholders and community support groups.

IBAs can be used to conserve birds in Australia

Knowledge about the location of IBAs, together with IBA maps and other supporting materials can be used to help conserve Australia's birds. With information on IBAs:

Why identify Important Bird Areas?

Above: **IBAs form a worldwide network of sites for the conservation of birds.** Note that IBAs shown include only those entered into the World Bird Database. With the completion of the IBA project in Australia, in June 2009 over 10,000 IBAs will have been designated in more than 200 countries and Territories. Map courtesy of BirdLife International.

- Birds Australia, other non-government organisations and the wider community can focus conservation and monitoring efforts in areas of highest priority.
- Private land owners and managers can learn about bird conservation values and conservation management options.
- Government land-use planners and policy makers can identify areas that are best safeguarded through wise land-use planning, policies, incentives and regulations.
- Business can identify areas to avoid or mitigate their impacts, and to invest in offsets.

Areas outside IBAs are also important

The IBA process is an objective prioritisation tool best used with an understanding of its limitations. In particular, areas outside IBAs may also have conservation importance:

- IBAs are priorities in the global context. Other areas may have national, regional or local importance.
- Some species and regions are poorly known, and further research may identify additional IBAs.
- Some species are poorly known, or leave land or Australia, at certain stages of their life cycle. IBAs have not been identified at sea, nor in every overseas country within these species' range.
- IBAs are based on a set of 'trigger' bird species. In most cases, other more common species will also be adequately conserved within IBAs. Some common species, such as birds of native grasslands, are under-represented in IBAs.
- IBAs are based on bird species, not subspecies.
- IBAs are priorities for site-based conservation. Some bird species are best conserved by larger-scale planning and actions.
- IBAs are mapped without buffers. Conservation of IBAs, especially wetlands, requires appropriate management of buffer zones and catchments.
- IBAs are mapped as discrete sites but in some landscapes their connectivity across non-IBA land may be important. Conservation action may include management or provision of corridors.
- With future climate change, priorities will change, habitats will eventually shift or change and species must be allowed to move across the broader landscape.

Despite their limitations, IBAs are accepted globally as a very useful prioritisation.

"Birds are beautiful, come in a wide variety of species, enrich our lives and are endlessly fascinating to watch. They are near the top of the food chain and are a barometer for the health of the ecosystems they live in. Monitoring and collecting data about birds can tell us a lot about what is happening to the insects, frogs, mammals, reptiles and other food sources they depend upon. Working on the IBA project over the last six years has been very rewarding and will contribute to the conservation of birds and their habitat for future generations."

Alan Briggs,
Birds Australia Capricorna

Left: The Forty-spotted Pardalote is one of Tasmania's endemic birds. Four IBAs have been designated for this Endangered species. Photo by **Chris Tzaros**

Top: Three IBAs, two of them across State boundaries, have been designated for the Endangered Black-eared Miner. Photo by **Dean Ingwersen**

Above: Four IBAs for the threatened Gouldian Finch have been identified in Western Australia and the Northern Territory. Photo by **Dean Ingwersen**

How are Important Bird Areas identified?

For any site proposed as an IBA, information is needed to show whether it meets at least one of three criteria. Obtaining this information is a thorough process involving extensive input from local experts. The three criteria are based on threshold numbers of globally threatened species, restricted-range species or congregatory bird species.

Identifying IBAs: the process

The identification of IBAs combines bottom-up local expert knowledge with the use of global standards. The process requires the participation of many people consulted via a number of means, including the conducting of workshops around regional Australia. Potential IBAs are identified by local experts and supporting information is provided by experts and gleaned from the published and unpublished literature and databases. Considerable effort is invested into locating adequate information – sometimes from relatively obscure sources – to justify every IBA. Draft descriptions are circulated for expert comment and evaluated where necessary by a project Technical Advisory Committee. Final descriptions are checked by Birds Australia and BirdLife International experts and associates. Landholders and other significant stakeholders are also invited to comment.

IBA criteria

All Australian IBAs meet global criteria developed by BirdLife International. Each IBA meets at least one of the following criteria by regularly holding a minimum number of birds. These are:

- 'Threshold' (or minimum) numbers of one or more globally threatened species;
- Representative populations of restricted-range species (any protected area supporting more than five per cent of the population of a bird with a small geographic range is designated as an IBA); and
- More than one per cent of the world population of one or more congregatory species.

For threatened and congregatory birds, site or IBA boundaries are independent of land ownership and all sites meeting the criteria are identified as IBAs. For endemic birds and where there is no alternative boundary, IBAs may match protected areas.

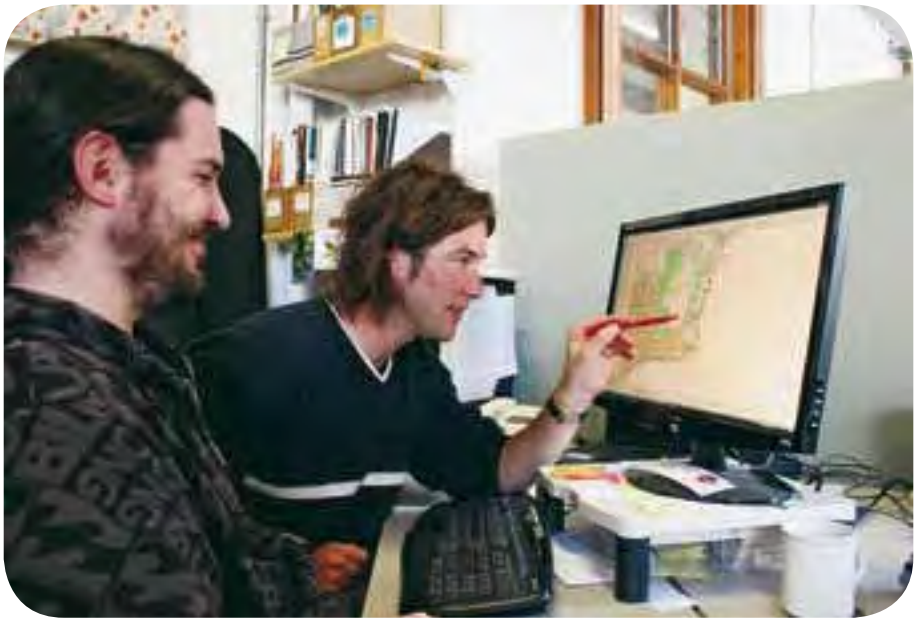
Elsewhere in the world IBAs have been identified that support representative populations of biome-restricted species, or near-threatened birds, or the regular occurrence of 20,000 waterbirds. In Australia there was either a complete overlap with IBAs identified under other categories or the information was too scarce to identify such areas with confidence, particularly in the arid zone and tropical savannas, so these criteria were not used.

1. Threshold numbers of globally threatened species

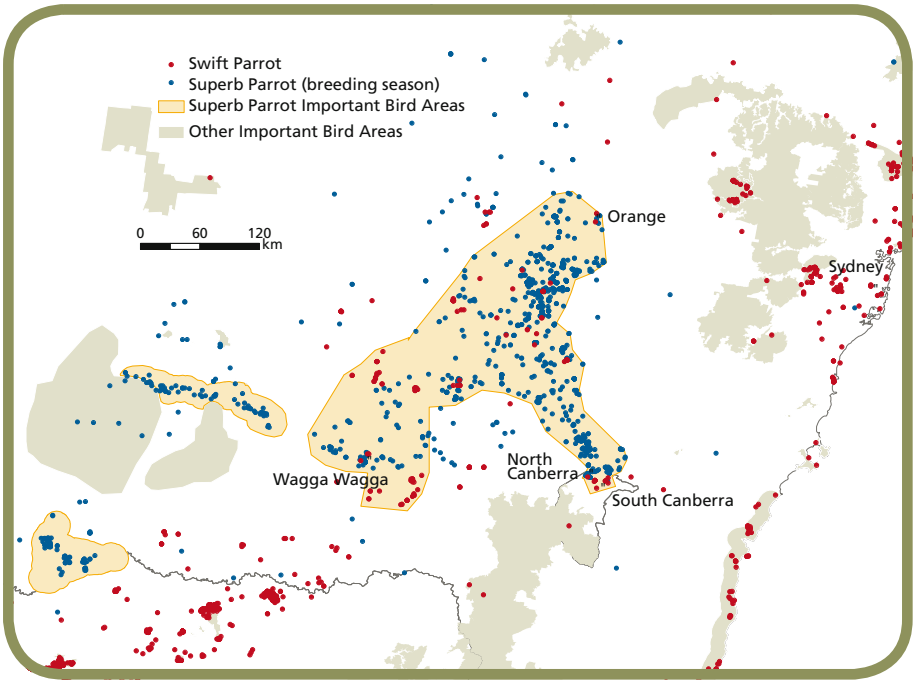
Globally threatened species considered in the IBA identification process are those listed in the 2009 version of the IUCN/BirdLife International list of threatened birds (see box on p. 14). Sites qualify for IBA status if they hold relevant numbers of Critically Endangered, Endangered or Vulnerable

Threatened Species Recovery Teams and the Identification of IBAs

Threatened species recovery teams played an important role in the identification of some IBAs. In Western Australia, IBAs for Carnaby's Black-Cockatoo were identified by members of the Carnaby's Black-Cockatoo Recovery Team. The Recovery Team, comprising experts from government, non-government organisations and the community, used the best available expert knowledge to make decisions about suitable minimum numbers for this species. The Recovery Team set the qualifying threshold at one per cent of the known breeding population, identified 12 IBAs in the Cockatoo's breeding range and confirmed the presence of the species at another 11 IBAs identified primarily for other species. Members of the Recovery Team also reviewed the IBA descriptions. Unfortunately there is still too little information available to adequately identify a comprehensive set of IBAs across the non-breeding range of the species.



How are Important Bird Areas identified?



Above: **Identifying the boundaries of IBAs for two trigger species.** The boundaries of many IBAs were identified by combining bird location records, knowledge of suitable habitat and local expert opinion. This map shows how the boundary of the South-west Slopes IBA in NSW was identified by mapping the locations of Superb and Swift Parrots, and drawing boundaries around particularly dense clusters of records.

bird species. For each species, a numerical threshold is based on ecological and practical factors. For instance, a higher threshold is determined for a numerically strong species such as Carnaby's Black-Cockatoo, even if it is rapidly declining. Near-threatened species were not used to trigger IBA status but information about these species in IBAs is recorded and used to support IBA nominations.

2. Representative populations of restricted-range species

Restricted-range species are defined by BirdLife International as having geographical ranges of less than 50,000 square kilometres. In Australia, most of these species are endemic to a particular region or island. Any protected area believed to support more than five per cent of the world population of one of these species was identified as an IBA. Additional IBAs were designated for any under-represented species or outlying population, so that the final IBA network of IBA sites adequately represents these species.

3. More than one per cent of the world population of congregatory species

Congregatory species are those which assemble in such large numbers that the species as a whole is vulnerable to impacts at these sites. Population estimates and one per cent thresholds have been documented for most waterbirds worldwide to support a criterion used to identify internationally important wetlands under the Ramsar Convention. However, the Ramsar threshold is one per cent of a discrete population of the species, whereas the IBA threshold is one per cent of the species, which may be much higher. Of Australia's many terrestrial birds, only Pied Imperial-Pigeon, Flock Bronzewing and roosting Baudin's Black-Cockatoo congregate in sufficient numbers to trigger the identification of IBAs.

IBAs must 'regularly' meet the criteria

The IBA selection process follows the Ramsar Convention in stating that IBAs must meet threshold numbers in two-thirds of years for which there is adequate information. However, in Australia climatic conditions mean that habitat use by many species is irregular over longer time-scales. For these species, IBAs must support minimum numbers in two-thirds of years where suitable conditions are triggered by events such as rainfall, high water levels or flowering.

More information about IBA criteria

For more information about the global IBA criteria developed by BirdLife International go to www.birdlife.org/datazone/sites/global_criteria.html For information about the identification of IBAs in Australia go to www.birdsaustralia.com.au/our-projects/identifying-ibas.html

Opposite page: The boundaries of many IBAs were identified by combining bird location records, knowledge of suitable habitat and local expert opinion. Photo by **Dean Ingwersen**

Above: Superb Parrot. Photo by **Chris Tzaros**

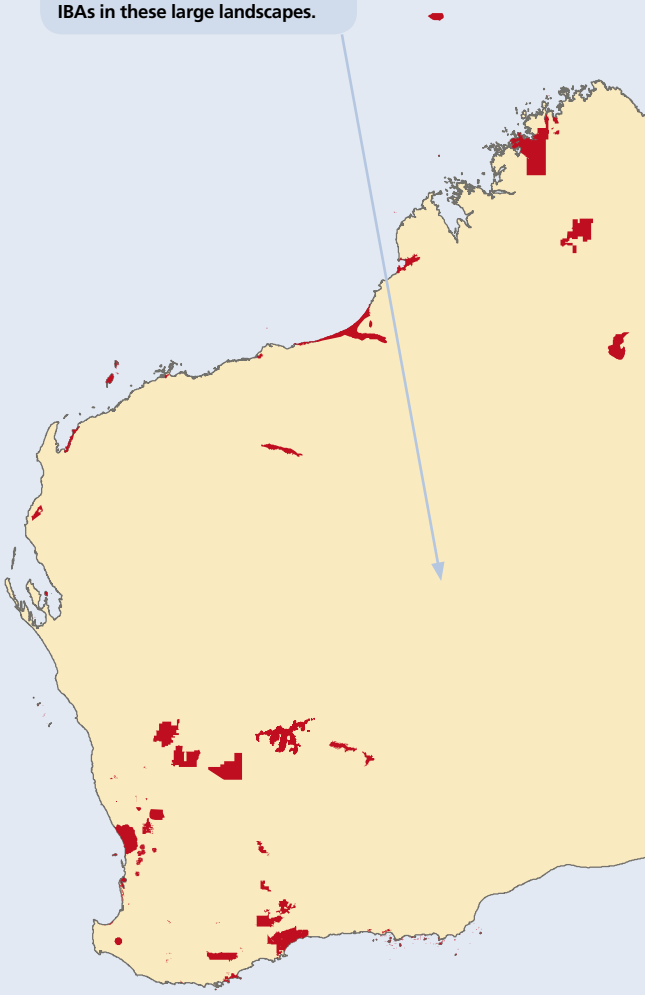
Where are Australia's Important Bird Areas?

Australia has 314 Important Bird Areas (IBAs) covering 5.7 per cent of its land area. IBAs are particularly densely concentrated in fragmented landscapes, coasts and islands. Most Australian oceanic Territories are IBAs for seabirds and threatened endemic birds. Some regions, notably the arid interior and brigalow belt, where birds range across large landscapes, have far fewer IBAs. IBAs are represented in all Australian States and most oceanic Territories, and cross borders wherever this is necessary.

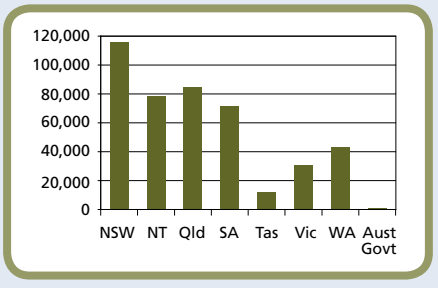
IBAs in Australia

IBAs have been identified in all Australian States and most oceanic Territories. Detailed maps and tables of IBAs for each State have been provided in the second half of this report. The map of Australian IBAs is the first to identify the most important places for birds across the whole country.

Regions with few IBAs
The arid interior and brigalow belt have few IBAs. These areas are important for birds but it is not currently possible to identify IBAs in these large landscapes.



Map right: Australia's 314 IBAs cover 5.7 per cent of its surface, compared with 7.6 per cent of Asia, 7 per cent of Africa, 6 per cent of Europe and 12 per cent of South America. IBAs are distributed across Australia, but cover a smaller proportion of the arid rangelands of the Northern Territory and Western Australia. Better survey data may enable the future identification of additional large IBAs in more remote regions.



Right: **The Number of IBAs in Australian States and Territories.** IBAs are more numerous in larger States, but also those such as Tasmania which have larger numbers of small IBAs designated for shorebirds and other coastal species.

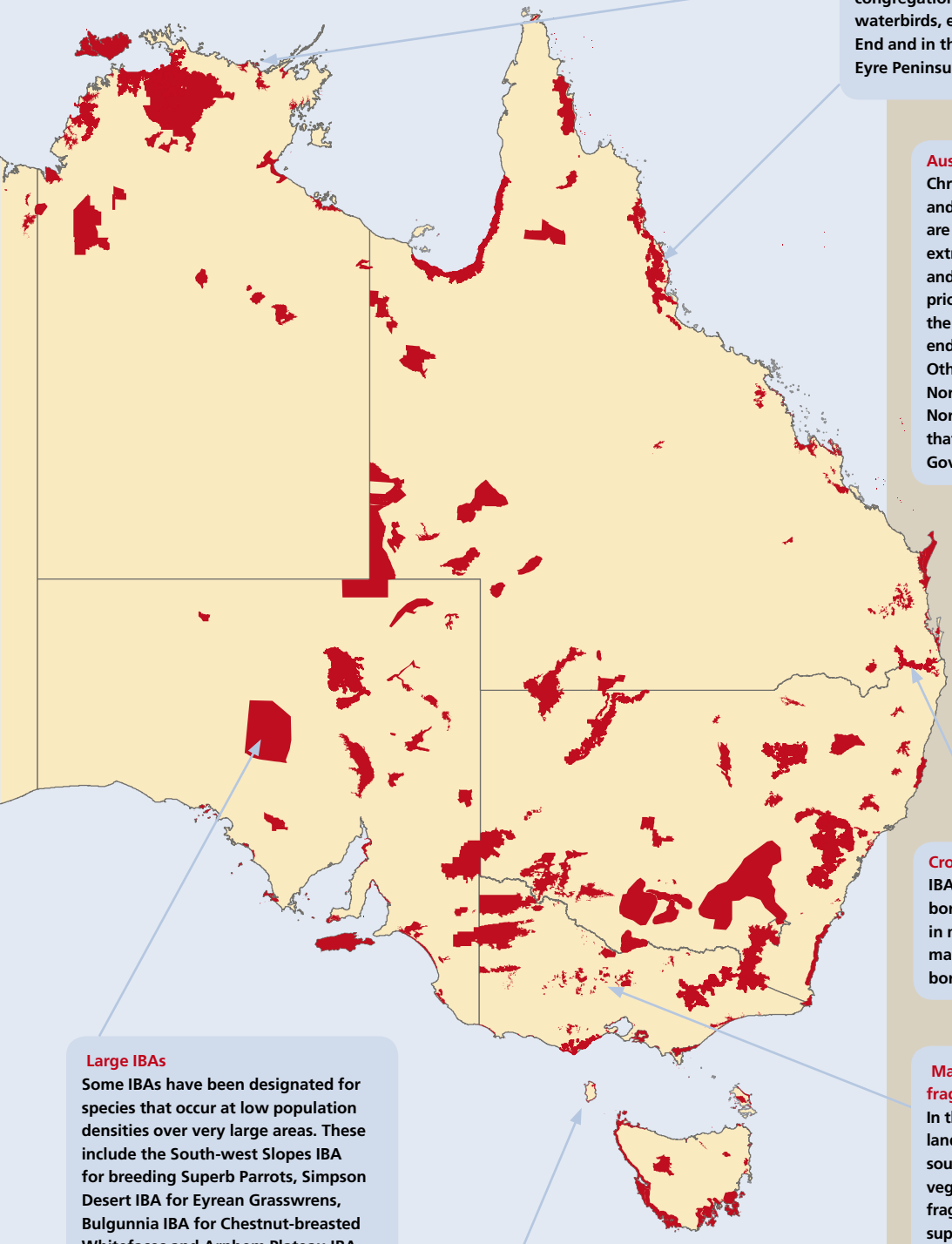
Far right: **The extent in square kilometres of IBAs in Australian States and Territories.** Relatively large IBAs have been designated in NSW, Queensland, the Northern Territory and South Australia to account for the needs of species that occur at relatively low densities over large areas.

Below: **Categories of IBAs in Australian Oceanic Territories**

Australian Oceanic Territories listed here are under the jurisdiction of the Australian Government. Other island Territories (e.g. Lord Howe Island) are under the jurisdiction of individual Australian States and are covered under State accounts in this report.

Seabird Islands	Ashmore Reef, Coringa-Herald Reefs, Heard & McDonald Islands, the Norfolk Island group (Norfolk, Phillip and Nepean), North Keeling Island
Migratory shorebirds	Ashmore Reef
Other	Norfolk Island (Norfolk Island Parakeet, Norfolk Island Gerygone, Slender-billed White-eye, White-chested White-eye)

Where are Australia's Important Bird Areas?



Many IBAs are along coasts
Australia's coastline supports large congregations of shorebirds and waterbirds, especially along the Top End and in the south-east between Eyre Peninsula and central Queensland.

Australia's oceanic islands
Christmas, Norfolk, Lord Howe, Macquarie, and Heard and McDonald Islands IBAs are too far from Australia to map, but are extremely important for threatened birds and seabirds. These are amongst the highest priority IBAs for conservation action due to the high numbers of threatened birds and endemic birds and relatively small areas. Other oceanic islands of importance include North Keeling Island and Phillip Island (off Norfolk Island). The oceanic IBAs identified that are the responsibility of the Australian Government are listed in the table.

Cross-border IBAs
IBAs are designated without borders or State jurisdictions in mind. Within the Australian mainland, 12 IBAs share borders with another State.

Large IBAs
Some IBAs have been designated for species that occur at low population densities over very large areas. These include the South-west Slopes IBA for breeding Superb Parrots, Simpson Desert IBA for Eyrean Grasswrens, Bulgunnia IBA for Chestnut-breasted Whitefaces and Arnhem Plateau IBA for White-throated Grasswrens.

Many IBAs are in Australia's fragmented landscapes
In the nation's agricultural and intensive land-use zone of south-eastern and south-western Australia, most native vegetation has been cleared and fragmented. Vegetation remnants support relatively large numbers of threatened birds.

Island IBAs
Many of Australia's small islands support large concentrations of nesting seabirds, especially on the Great Barrier Reef and around Tasmania. Some of these seabird colonies and IBAs are very small: 20 IBAs are less than one hectare in size. 87 island IBAs have been designated – these do not include small islands that are part of an offshore component of a mainland IBA.

Important Bird Areas, habitats and land use

IBAs occur across many habitats. Over half of Australia's IBAs are triggered by waterbirds, shorebirds or seabirds utilising wetland, coastal or island habitats. Temperate forests and woodlands are the important habitat in most of the remaining IBAs. The IBAs on private land, including much traditionally owned land, are used primarily for grazing. There are opportunities for conservation across all tenures.

IBAs occur across many habitats

Artificial water storages and sewage treatment plants also provide wetland habitat that is valuable, particularly for Australian waterbirds. Habitats that are particularly prevalent among Australian IBAs include inland and coastal wetlands as well as the rocky or sandy habitats on islands used by nesting seabirds. Nearly half of the remaining IBAs are triggered by birds of temperate forests or woodlands. There is a smaller number of IBAs in which rainforest, tropical savanna, arid grasslands, mangroves, mallee or heathland are critical. Agricultural land is important for trigger bird species only on the Atherton Tablelands, where fallow fields are used by Sarus Cranes, and in the Ord Irrigation Area, where Yellow-rumped Mannikin use weedy field verges. In a number of IBAs, more than one habitat type is important for significant birds.

Wetlands and islands

Inland wetlands are the trigger habitat in 92 IBAs, with coastal wetlands (78 IBAs) and the small islands used by marine seabirds (78 IBAs) not far behind. All are particularly important for congregatory birds. In Australia most inland wetlands are ephemeral. When they hold water they are hugely productive for waterbirds, but some can be dry for decades (pp. 16–17). Coastal wetlands (pp. 18–19) constitute part of a vast international network for shorebirds that travel the length of the globe to use them. Seabirds (pp. 20–21) are equally well travelled. For these highly mobile and migratory bird species Australia has international obligations.

Forests, woodlands and grasslands

For 71 IBAs the trigger bird species depend on forests or woodland. The number is high because so much of this habitat has been cleared for agriculture, leaving fragments that are valuable for the birds that remain. By contrast relatively few IBAs are triggered by birds that use arid grasslands and shrublands (26 IBAs) or tropical savannas (16 IBAs). These habitats not only remain largely intact, they support fewer bird species with naturally small ranges.

Specialist birds in special habitats

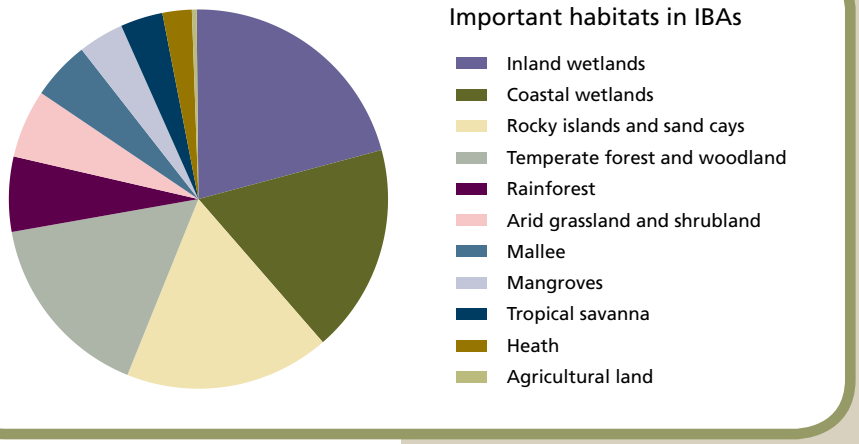
A number of Australian birds are endemic to low, fire-sensitive vegetation such as mallee (important in 22 IBAs) or heathland (11 IBAs). Appropriate fire management is critical if these IBAs are

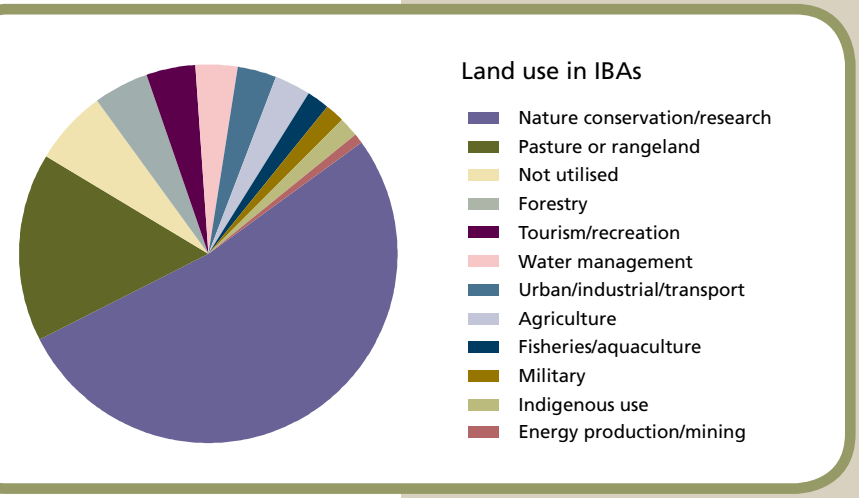
Important Bird Areas, habitats and land use

to keep their value. At the wetter end of the scale, the designation of IBAs is triggered by rainforest species (28 IBAs) or specialist mangrove species such as Chestnut Rail or Mangrove Honeyeater (17 IBAs). For the birds that inhabit these IBAs climate change is now the biggest threat.

Land-use in IBAs

In almost 50 per cent of IBAs, some form of nature conservation or conservation research activity is undertaken, and these activities occur across all forms of land ownership, including private, Indigenous and government. Many IBAs are on private or leasehold land utilised for rangeland cattle or sheep grazing, where there are opportunities to work with graziers to improve the conservation status of their key birds. In addition to livestock production, biodiversity conservation and ecosystem services are important outcomes from the successful management of grazing land. In many IBAs, multiple activities or land uses are likely – for example, recreational activities such as bushwalking are common in National Parks, and conservation is possible in land used for industry, mining or military activity.





Graphs from top:

IBAs encompass many habitats. The designation of the highest proportion of IBAs is triggered by species that are dependent on water – inland, on the coast or at sea. Many IBAs are also triggered by birds from temperate forest and woodland.

There are multiple land uses in IBAs. Land use is varied across IBAs, but conservation is an activity in more than half. Grazing in pasture or rangeland is also a feature of a significant number of IBAs.

From left to right:

Coastal heath habitats are under threat by coastal development and inappropriate fire regimes, yet are home to a number of threatened species. Photo by **Martin Gole**

Woodland in the Pilliga IBA. Forest and woodland habitats are important for a number of key IBA bird species. Photo by **Rod Kavanagh**

The Dampier Saltworks IBA consists of inundated salt evaporation and intake ponds surrounded by tidal creeks and mud-flats. The IBA is important for migratory shorebirds and Dusky Gerygone, a restricted-range species endemic to northern Western Australia. Photo **© 2009 Rio Tinto**

Important Bird Areas and land ownership

IBAs occur across a number of different categories of ownership, and two or more kinds of ownership are possible in a single IBA. In Australia, IBAs may be privately owned, under the custodianship of traditional Indigenous people or vested in various levels of government. For all owners there are significant opportunities for IBA conservation.

IBAs occur across tenure

Designation of IBAs helps to draw attention to their importance for the birds that have triggered the designation. This is the case regardless of who owns the land. In Australia almost a third of the IBAs are partly or fully privately owned, about eight per cent are partly or fully under the ownership of traditional Indigenous people and fewer than 60 per cent are fully or partly owned by local, State or Federal government.

The designation and management of protected areas is the main way in which Australia as a nation conserves biodiversity. The Australian Government aims to reserve at least 10 per cent of all bioregions and to protect key habitats for nationally listed threatened species and migratory species. Although more than 9,000 formally protected areas cover 11 per cent of the Australian landmass, many bioregions are under-represented and many threatened and migratory species are poorly protected. Moreover, some species are declining, even in protected areas. This highlights the need for conservation in the almost 90 per cent of Australia's landmass that is outside the formal conservation estate.

Private land and conservation

A number of non-government organisations and private landholders have bought or leased areas that they privately protect and manage for conservation, some of which include IBAs. For the acquisition of some private protected areas, financial support has been made available by the Australian Government. Private protected areas are not represented on the map (see next page) but overlap with several IBAs including the Riverland Mallee, Mornington Station and Simpson Desert IBAs. An additional protective mechanism for threatened birds and habitat of high conservation value involves placing legally binding nature conservation covenants on the title of private land. A small number of private landholders choose voluntarily to protect IBAs on their land in this way, but increased financial assistance by government will be necessary before this becomes widespread practice.

Indigenous Protected Areas

Ongoing Indigenous management is important for many IBAs. Across Australia, 11 per cent of the area of all IBAs is currently managed by Traditional Owners. Indigenous Protected Areas are an exciting addition to the protected area network. They are nominated by their Traditional Owners and managed by them with support from the Australian Government. Recently, Traditional Owners nominated the entire eastern part of the range of the White-throated Grasswren on the Arnhem Land plateau as an Indigenous Protected Area. The Traditional Owners of this site have used the value of the site for this species as part of their nomination.

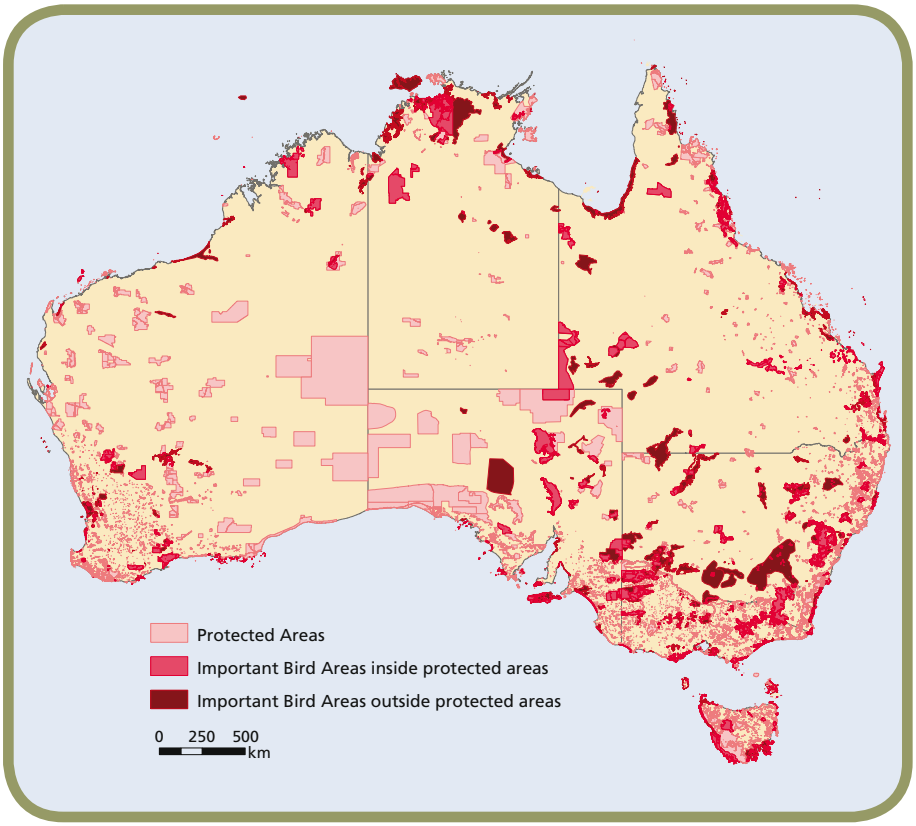
Why designate existing protected areas as IBAs?

The IBA analysis provides an objective overview of bird conservation priorities across a range of protected areas nationally, identifying those that are particularly important for birds. There are

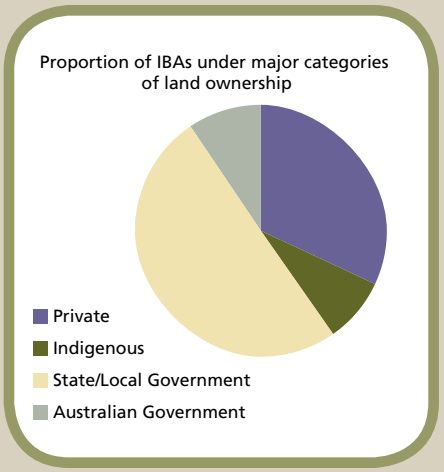
Above: Private protected areas such as the Mornington Sanctuary IBA have an increasingly important role in conservation. Photo by **Dean Ingwersen**

Below right: The Swan Bay and Port Phillip Bay Islands IBA. Sites such as this are important for species like Red-necked Stint which move freely across tenure boundaries between Lake Victoria, Sand Island and Mud Islands. Photo by **Ashley Herrod**

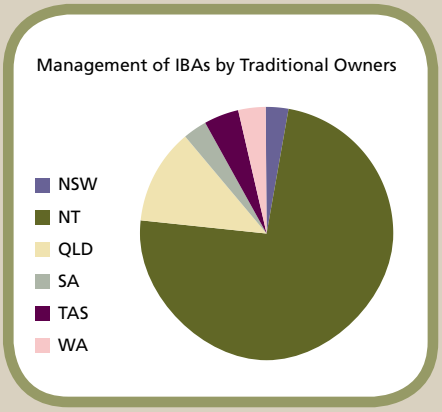
Important Bird Areas and land ownership



Above: **The overlap of Australian IBAs and protected areas (not including remote oceanic IBAs).** While there is substantial overlap between IBAs and protected areas, many IBAs occur on other tenures or extend beyond protected area boundaries For this analysis, 'protected areas' are defined using the Australian Government's Collaborative Australian Protected Area Database (CAPAD), which only includes formal protected areas and Indigenous Protected Areas designated before 2007.



Above: **The proportion of IBAs under private, Indigenous or government ownership.** Although most IBAs are owned by government, a significant number are owned by private landholders or Traditional Owners.



Above: **Almost three quarters of all IBAs managed by Traditional Owners occur in the Northern Territory.** Much smaller numbers (and areas) of IBAs are managed by Indigenous people in most other States, suggesting that there is an opportunity for this to increase in the future.

a number of advantages in designating national parks and other protected areas as IBAs. Some protected areas are well managed by governments fully aware of their bird conservation values. Others, especially in remote Australia, are not managed in ways that recognise the special needs of key bird species.

The designation of an IBA can alert managers to its importance and inspire volunteers to assist managers to improve its management. Where appropriate, IBA status can be used to encourage visits by birdwatchers and other tourists. As IBA designation is not constrained by land tenure, some IBAs include protected areas together with adjacent unprotected areas that also support the 'trigger' birds, thus enhancing the conservation values of the protected areas.

Unprotected government land

Many IBAs, especially seabird islands and intertidal shorebird habitat, are on unallocated Crown Land or other land managed by government. Formal protection of these sites could help prevent destructive land-use and their conservation management could be considered a priority.

Threatened birds and Important Bird Areas

Australia has many threatened bird species. In 2009, IUCN/BirdLife International listed 58 species of Australian birds as globally threatened. Australia's threatened species are very well represented in IBAs although some are too poorly known or range over too large an area to be represented adequately. Of the 314 IBAs designated across Australia, 167 have been designated for at least one threatened species.

The IUCN/BirdLife Red List

The IUCN or World Conservation Union maintains global best practice standards for many conservation processes. The IUCN/BirdLife Red List is based on standard objective criteria and is consistent across countries and open to all contributors. The bird section of the Red List is updated annually by BirdLife International, with changes to Australian birds advised by recommendations from Birds Australia's Threatened Species Committee.
The IBA project uses this Red List to maintain global consistency, to achieve independence from governments and to be as up-to-date as possible.

The IUCN describes species according to their likelihood of extinction:

- Critically Endangered species face an extremely high risk of extinction in the immediate future.
- Endangered species face a very high risk of the extinction in the near future.
- Vulnerable species face a high risk of extinction in the medium-term.

Currently, 58 species that occur in Australia are listed under one of the three categories.

For more information on the IUCN/BirdLife Red List go to www.iucnredlist.org/

IBAs for Australia's threatened birds

Unfortunately, Australia has more threatened species than most countries, with most of these being unique or endemic to this country. This level of loss and endangerment is largely a result of widespread historical and recent clearance of native vegetation and bird habitat, the insidious impacts of invasive alien species (pest plants and animals) and overgrazing. Recently, species such as the Mallee Emu-wren have been added to the Endangered list because of more extensive wildfires, and water shortages are contributing to the endangerment of species such as the Australasian Bittern.

Which threatened species list?

A number of threatened species lists exist at regional, national and international levels. To maintain consistency in the global IBA program, BirdLife International and the Australian IBA project use the *IUCN/BirdLife Red List*. The Australian Government uses species and subspecies listed under the *Environmental Protection and Biodiversity Conservation (EPBC) Act* 1999 (currently, 108 species or subspecies are listed as nationally threatened under the Act) and State governments use their own lists. These lists rely on a number of criteria for listing and are sometimes out of date. They also include threatened subspecies and populations. An additional advantage in utilising the *IUCN/BirdLife Red List* is the ability to readily compare Australia with other countries.

Top: The migratory Endangered Swift Parrot breeds in Tasmania and over-winters in mainland Australia, triggering IBAs across a small number of states. Photo by **Chris Tzaros**

Above: The Endangered Plains-wanderer has triggered the designation of only four IBAs across native grassland, much of it on private land. Photo by **Guy Dutson**

Species-specific threshold numbers

One of the criteria for IBA status is that a site supports a threshold population of any globally threatened species. Where necessary, population thresholds are determined for each individual threatened species in consultation with Recovery Groups and other experts.

Threatened species and Australian IBAs

Across Australia, almost 26 million hectares of habitat have been designated in 167 IBAs for globally threatened species. Some IBAs have been designated for more than one threatened species. Most IBAs have been designated for Endangered and Vulnerable species. Fewer have been designated for Critically Endangered species because of their scarcity.

Threatened species and islands

There are 19 threatened species in Australia that are only found on small islands. These include five species endemic to Christmas Island, four to Norfolk Island and one to Lord Howe and Macquarie Islands. Another eight species of threatened seabirds are found on Cabbage Tree & Boondelbah Islands, New South Wales, and Heard & McDonald Islands, in the sub-Antarctic.

Some threatened species are poorly known

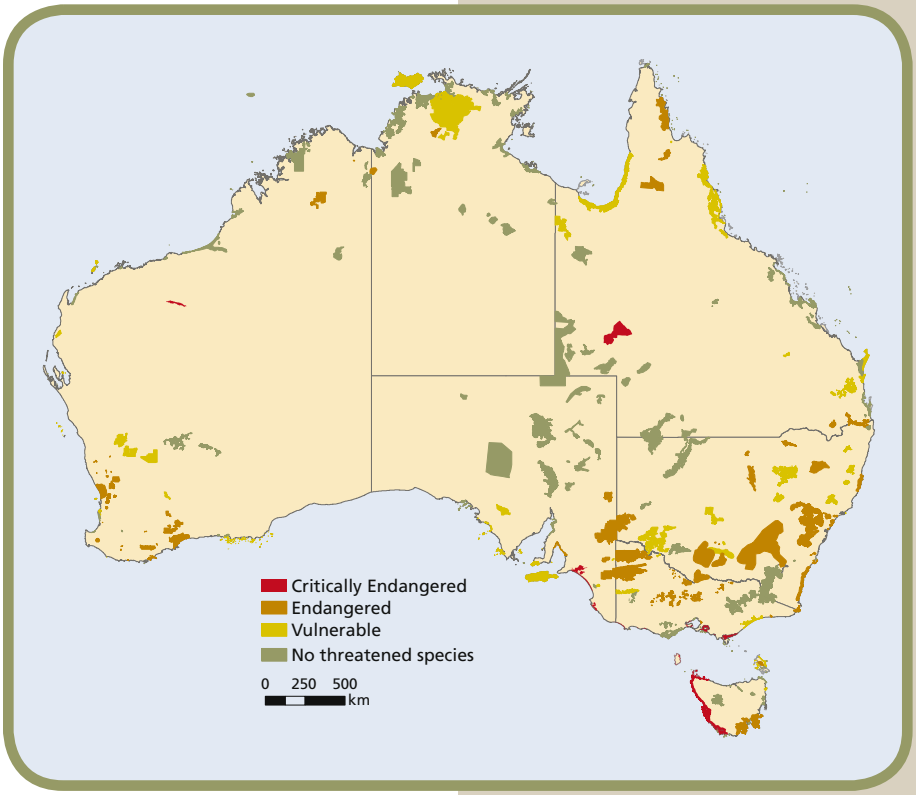
The IBA network in Australia includes more than 95 per cent of the individuals of most of the 58 threatened species, but some species are poorly known. The two

least-known species, the Night Parrot and Buff-breasted Button-quail, are poorly represented in IBAs although they could be present in some. The Night Parrot could be on the verge of extinction; it may be a nomadic species and there have been very few confirmed records in the last century. The survey work required to understand the distribution of species such as Night Parrot and Buff-breasted Button-quail is outside the scope of the IBA program.

Less than half the individuals of Carnaby's and Baudin's Black-Cockatoo, Gouldian Finch, Red Goshawk and Painted Honeyeater, and between 50–95 per cent of Australasian Bittern, Plains-wanderer, Malleefowl, Sarus Crane, Black-breasted Button-quail and Fairy Tern, are estimated to live in IBAs. Some species occur at low population densities across large areas and others are mobile, with limited data for precise mapping of their IBAs.

Some species are poorly reserved

Many threatened species are well represented in protected areas, as conservation reserves have been established for these species. Most populations of Endangered species such as Eastern Bristlebird, Black-eared Miner and those endemic to small islands are within protected areas. Other Endangered species such as Plains-wanderer, Swift Parrot and Regent Honeyeater are poorly represented in protected areas. Amongst the Vulnerable species, very few Sarus Crane, Superb Parrot and Painted Honeyeater breed in protected areas. For poorly reserved species, conservation efforts must focus on off-reserve management of IBAs with supportive landholders.



Above: **Most IBAs triggered by threatened species are designated for Endangered and Vulnerable species.** Fewer have been designated for Critically Endangered species because of their scarcity.

Conservation on private land: the case of the Regent Honeyeater

There has been a long history of community conservation action for the Regent Honeyeater on private land, including fencing remnant vegetation to protect it against grazing by stock and undertaking new plantings for core habitat and corridors.

Far left: The Endangered Regent Honeyeater is a mobile species and most recent sightings are from outside protected areas. Of the 12 IBAs designated for this threatened species, most are wholly or partly on private land. Ten of these IBAs are in New South Wales, one in Queensland and one in Victoria. Photo by **Chris Tzaros**

Left: Community-based conservation projects for threatened species on private land have a long history. For well over a decade, Birds Australia has been working with landholders to better protect and manage the Endangered Regent Honeyeater in the Capertee Valley IBA. Photo by **Dean Ingwersen**

Waterbirds and Important Bird Areas

Many IBAs are wetlands supporting large numbers of waterbirds. Waterbirds in southern Australia are threatened by reduced water flows into wetlands. The poor state of many wetlands in the Murray-Darling Basin makes it particularly important to conserve wetland IBAs in the Channel Country, Gulf Plains and the Top End. All wetland IBAs meet the criteria for consideration as Ramsar sites.

Australia's waterbirds

Waterbirds include ducks, geese, swans, cormorants, pelicans, herons, egrets, ibises, spoonbills, storks, cranes, rails, shorebirds and terns. Shorebirds are discussed separately in this report (see pp. 18–19). Many waterbirds congregate in large numbers at favoured wetlands, triggering the IBA criterion of more than one per cent of a species' world population at one site.

Species which only flock in small numbers, such as Australian Wood Duck, White-faced Heron, bitterns and rails, rarely reach the minimum numbers required for IBA designation but often occur in smaller numbers at many IBAs designated for other species. Most waterbird species are declining in southern Australia because of reduced rainfall, excessive use of limited water resources and degradation of wetland habitat.

Water use and climate change at southern Australian wetlands

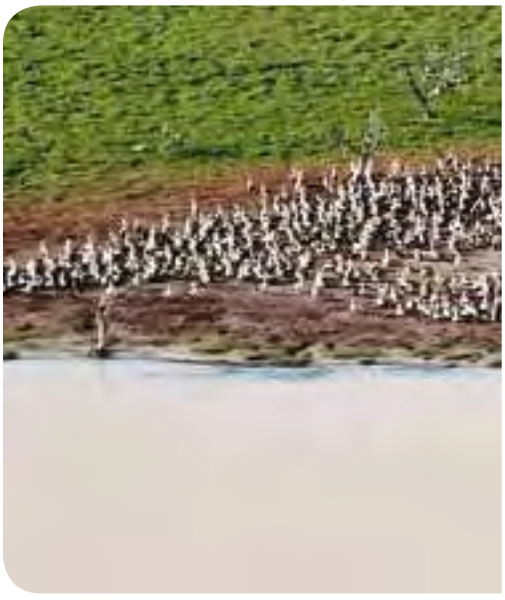
The birds at many wetland IBAs in southern Australia are threatened by decreasing water inflows. Over-allocation of water in the Murray-Darling Basin has lead to greatly reduced (or cessation of) inundation of floodplains, marshes and lakes. Waterbird numbers at the Lowbidgee IBA declined by 90 per cent between 1983 and 2001. Some sites historically qualified as Ramsar sites but have not met threshold waterbird numbers since the early 1990s. These are rejected as IBAs if there is evidence of permanent change to the hydrology, owing to extraction or diversion, as well as from reduced rainfall. The loss of waterbird habitat at these non-IBAs, and indeed at many IBAs that now support many fewer waterbirds than previously, is one of the most significant threats to bird conservation in Australia. In some cases these threats could be alleviated by government purchase of entitlements and increased allocations to environmental flows.

Waterbirds in unregulated river systems

As the number of breeding waterbirds has declined so much in southern Australia, particular attention needs to be paid to the remaining healthy wetlands of the Channel Country, Gulf Plains and the Top End. Water extraction could be devastating if allowed from unregulated 'wild river' systems still supporting large numbers of breeding waterbirds.

Weeds, coastal inundation and climate change at northern Australian wetlands

Many of the key wetlands in northern Australia are on coastal and sub-coastal floodplains susceptible to the impacts of climate change. Storm surges and higher tides threaten to inundate these freshwater wetlands with seawater. These floodplains are also threatened by invasive weeds which have already smothered huge areas of the Mary River and other important floodplains.

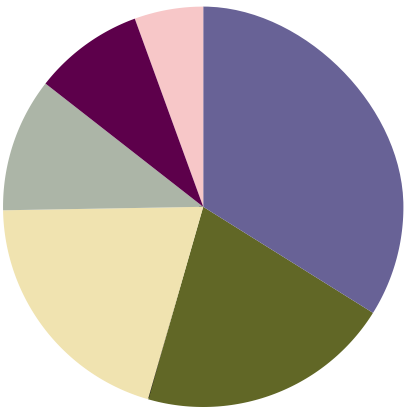


Waterbirds and Important Bird Areas

The Ramsar Convention

The Ramsar Convention is an international conservation agreement to which Australia is a signatory and active participant. A key component is the designation of internationally important wetlands. In Australia, Ramsar sites benefit from protection under Australian Government environmental protection legislation (the EPBC Act). Of the nine qualifying Ramsar criteria, two are based solely on waterbirds: any wetland which regularly supports one per cent of a waterbird population or more than 20,000 waterbirds. All IBAs meeting waterbird thresholds could qualify as Ramsar sites, along with many more non-IBAs.

The Ramsar Convention is similar to the IBA process in promoting off-reserve conservation. However, Ramsar listing imposes legal management obligations which make it more powerful but also more difficult to negotiate with landholders. Such management obligations have little power outside the site, especially in relation to maintaining adequate water inflows. For instance, counts of waterbirds in the Kerang Ramsar Site have collapsed from 299,000 waterbirds in 1987 and 107,000 in 1993 to no more than 22,000 in subsequent years. Of the 22 wetlands in this Ramsar site, 14 have been excluded from the North Victorian Wetlands IBA. Ramsar-listed wetlands are elsewhere also declining in conservation value. A number of Australian Ramsar-listed wetlands did not meet IBA criteria and have not been designated as IBAs. These include the



Above: **Most IBAs for waterbirds have been designated for shorebirds.** The largest proportion of IBAs has been designated for migratory shorebirds, but significant numbers of IBAs have been designated for gulls, terns, ducks, herons and other waterbirds.

Forrestdale and Thomsons Lakes Ramsar site in Western Australia, Bowling Green Bay in Queensland and Lake Albacutya in Victoria. Almost 17 per cent of IBAs overlap with Ramsar sites. The Ramsar waterbird criteria are met by 171 IBAs, of which 53 are partly or wholly designated as Ramsar sites and 118 are not.

Above left: Australian Pelican. Photo by **Glenn Ehmke**

Below left: Lake MacLeod. Photo by **Tony Kirkby**

Below centre: An Australian Pelican colony at Big Hole in the Lake Sylvester System IBA in the Northern Territory. When flooding, this IBA attracts hundreds of thousands of waterbirds. As the water recedes, the area is important for some species of migratory shorebirds. Photo by **Roger Jaensch (Wetlands International)**

Below: Red-necked Avocet. Photo by **Chris Tzaros**

Shorebirds and Important Bird Areas

Shorebirds are a group of waterbirds that have triggered the designation of many IBAs, mostly along the coast and in the Lake Eyre Basin. Migratory shorebirds require conservation action across their international range. Resident shorebirds are threatened by coastal development and all shorebirds are declining at freshwater wetlands suffering changed hydrology and habitat degradation.

Monitoring Shorebirds

The Shorebirds 2020 National Shorebird Population Monitoring Program aims to monitor shorebirds in Australia, report on their population trends and identify the factors causing population changes. A number of shorebird IBAs, as well as other shorebird areas important at national and flyway level, are regularly monitored by local groups and volunteers, with monitoring coordinated by Shorebirds 2020. For more information go to www.shorebirds.org.au

Migratory shorebirds

Large spectacular flocks of shorebirds are a feature of many IBAs. Australia regularly supports 36 species of migratory shorebirds, most of which nest in the Arctic and migrate to Australia and tropical Asia during the southern summer. A few species breed in central Asia and the Double-banded Plover nests in New Zealand. The Eighty Mile Beach IBA and Mandora Marsh and Anna Plains IBA have, at various times, each supported about three million shorebirds.

Resident shorebirds

Australia has 18 species of resident shorebirds. These are less well studied than migratory shorebirds, partly because few of these species aggregate in large flocks and partly because these species do not undergo regular international migrations and so are not covered by various agreements between countries where they occur.

One large IBA or several small IBAs?

Shorebirds congregate in vast numbers at some coasts, lakes and other wetlands. Sometimes the IBA is clearly delineated but shorebirds can also be distributed in varying numbers and densities along long stretches of coast or floodplain or among a cluster of lakes and marshes. The wetland systems supporting the highest numbers and densities are mapped as IBAs but in some cases further research is needed to better define the boundaries.

Ephemeral wetlands

To be designated as IBAs, wetlands must regularly support threshold numbers of birds when conditions, such as water levels, are suitable. Many Australian wetlands are ephemeral, drying out each year or for several years between floods. The most extreme example is Lake Torrens, which has flooded only once in the past 150 years. Given that it was estimated to support half of the total population of breeding Banded Stilts during its single documented flood, that the species has bred at very few sites, and that the breeding event occurred relatively recently (1989), Lake Torrens has been designated as an IBA. Other ephemeral IBAs flood more frequently and often support a range of waterbirds. The Fortescue Marshes IBA in Western Australia floods about once every ten years and have supported more than one per cent of the world population of 14 waterbird species.

Threats to shorebirds

The populations of many shorebird species are declining, but few species are listed as threatened. Inland shorebird species are probably declining owing to a number of factors including habitat loss from decreasing and over-allocated water flows. Many of these birds rely on shallow freshwaters that need unregulated floods or adequate environmental flows. In some regions, the salinisation of freshwater wetlands is also contributing to habitat loss. In the Lake Warden IBA and Ramsar site, rising

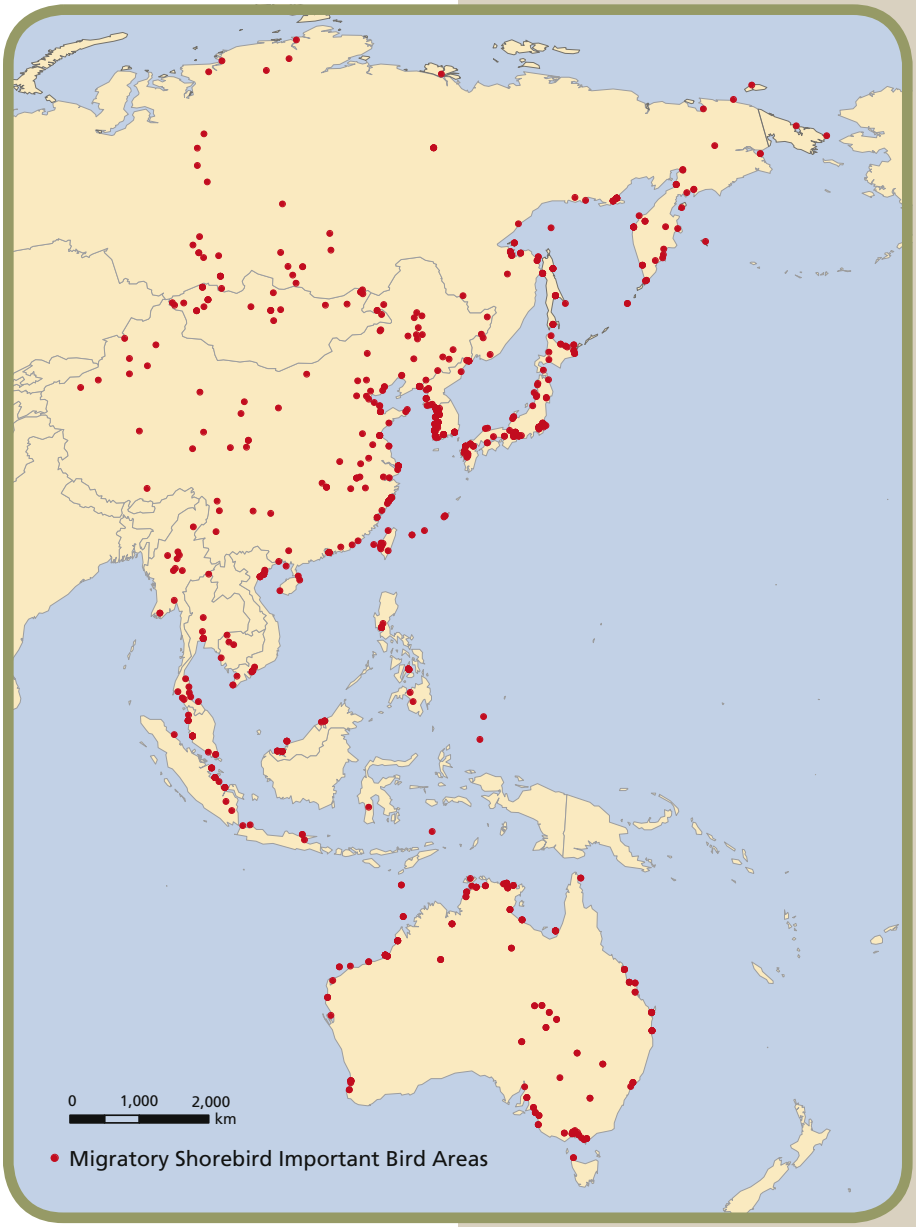
Shorebirds and Important Bird Areas

groundwater resulting from vegetation clearance in the catchment has resulted in increasing numbers of waterbirds requiring deeper water but a loss of shallow water habitat for migratory and resident shorebirds.

Coastal resident species, such as the beach-nesting south-eastern Australian population of Hooded Plover, are declining because of increased pressures from development and general recreational activity. The relative importance of Tasmania for these species is indicated by the large numbers of IBAs along the coasts and islands of that State that have been triggered by beach-nesting shorebirds.

Coastal migratory species are also threatened by coastal development and increased disturbance. However, the greatest threat to these species is while they are on migration, particularly the loss of habitat enroute. The reclamation of inter-tidal mudflats in the Yellow Sea in particular needs international efforts to negotiate better outcomes for our shared shorebirds.

Conservation of Australian migratory shorebirds requires action at all IBAs designated for shorebirds across the whole of the East Asian-Australasian Flyway.



Above: **IBAs for migratory shorebirds across the East Asian-Australasian Flyway.** Conservation of Australian migratory shorebirds requires action at all IBAs designated for shorebirds across the whole of the Flyway, including northern breeding grounds, migration stop-over sites and southern non-breeding grounds.

From below left to right:

Pied Oystercatcher. Photo by **Dean Ingwersen**

Shorebirds in flight. Photo by **Glenn Ehmke**

The migratory Red-necked Stint has triggered the designation of IBAs around Australia. Photo by **Glenn Ehmke**

Seabirds and Important Bird Areas

Australia supports large numbers of many seabird species that feed in its seas and nest on its islands. Of the 314 Australian IBAs, almost a third (98) have been designated at least partly for seabirds. Many IBAs are small islands designated for their nesting seabirds. Many islands are still plagued by predators such as rats, which need eradicating. At sea, prime seabird feeding areas could benefit from protection as Marine Protected Areas. The IBA analysis helps to identify and prioritise important islands for conservation action.

Australia's seabirds

Many seabird species remain far out at sea for much of the year, returning to land only during the nesting season, often only after dark and to offshore islands. For this reason, seabirds can sometimes be overlooked. Any site supporting more than one per cent of the world population of a seabird or at least one pair of an Endangered species or at least 10 pairs of a Vulnerable species may be designated as an IBA.

Australia is very important for the number and variety of seabirds that nest and feed on its islands and around its coasts. Australia also supports the world's largest colonies of Little Penguin and Short-tailed Shearwater, with an estimated 11.5 million pairs of Short-tailed Shearwater in Tasmania alone. Seven species occur nowhere else in the world:

- Royal Penguin is endemic to Macquarie Island.
- Shy Albatross is endemic to Albatross, Mewstone and Pedra Branca Islands.
- Providence Petrel is endemic to Lord Howe and Phillip Islands.
- Black-faced Cormorant is endemic to southern Australia, represented in 21 IBAs each supporting more than one per cent of the population.
- Christmas Island Frigatebird is endemic to Christmas Island.
- Abbott's Booby is endemic to Christmas Island.
- Pacific Gull is endemic to southern Australia, represented in 17 IBAs, each supporting more than one per cent of the population.

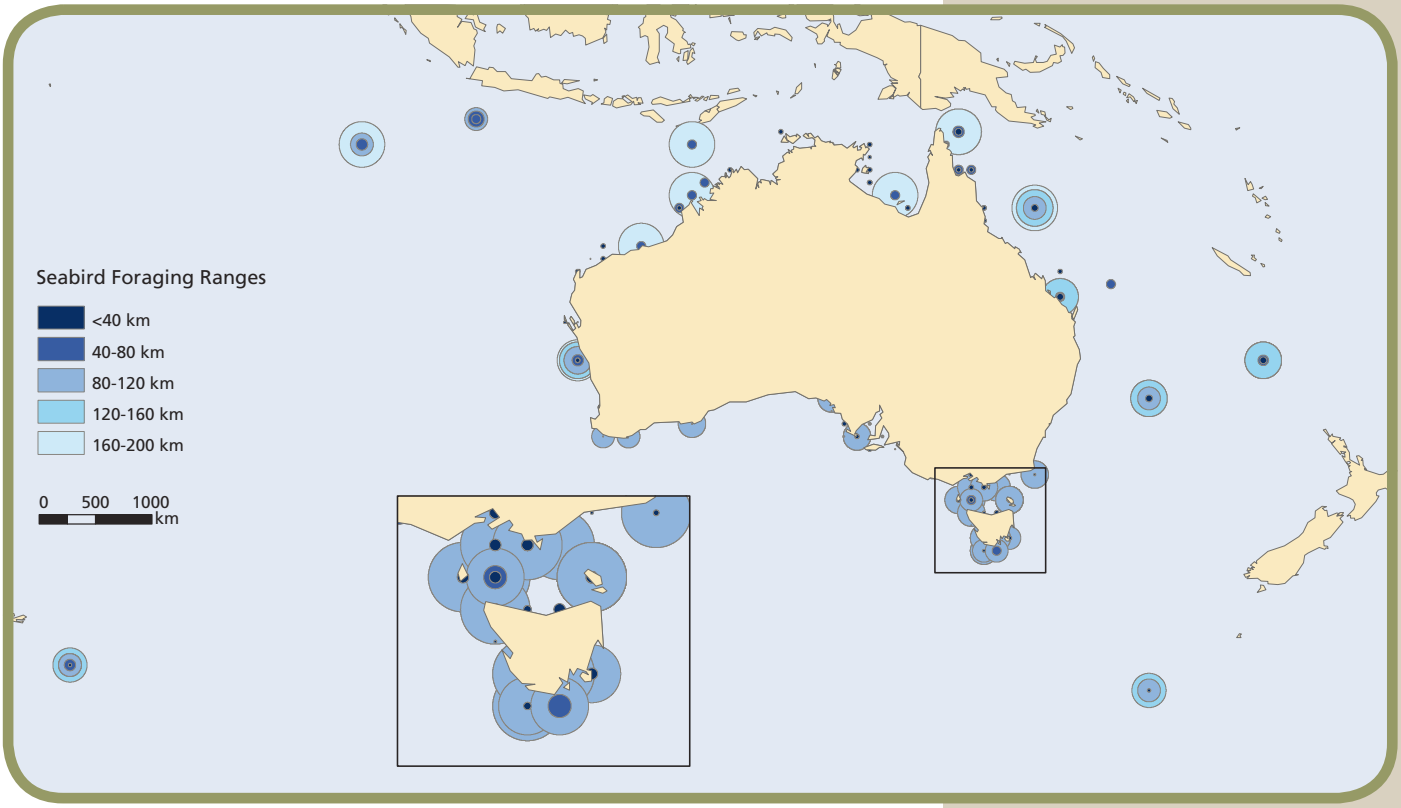
Conservation actions needed

Most seabird IBAs are offshore islands and many are unallocated Crown Land. Most have been reserved as protected areas but some, especially in Tasmania and the Kimberley, remain unprotected. Monitoring seabird numbers and breeding success can indicate any threats to be addressed. The most common threat on land is from rats and other invasive species; where they have not already established, effective protection is needed to prevent their colonisation. Designating these islands as protected areas and instigating population monitoring and strict biosecurity (protection against biological threats) would be a relatively easy conservation gain.

Foraging at sea and Marine Protected Areas

Both marine feeding areas and nesting islands are critical for seabird conservation. While the distribution of seabirds at sea has been poorly known in the past, increasing numbers of studies involve tracking the movements of individual birds. BirdLife International has used these tracking studies to estimate the average foraging ranges for each seabird species. Foraging ranges for inshore species are plotted on the map as simple radii around nesting IBAs. Species which feed far offshore, such as shearwaters and albatross, often forage in specific areas at specific times. Mapping these offshore foraging areas and inshore waters indicates the contribution

Seabirds and Important Bird Areas



Above: **The foraging range for inshore seabirds.** Inshore seabirds forage up to 200 km around IBAs. Offshore seabirds with foraging ranges greater than 200 km are not plotted on this map. These seas receive little conservation attention, and could benefit from declaration of marine protected areas.

that a network of Marine Protected Areas could make to the protection of Australia's seabirds at sea.

Eradicating alien species

All rabbits, rats and mice are to be eradicated from Macquarie Island in 2010. The success of this operation will directly improve the conservation status of a range of seabirds and allow recovery of vegetation. Planning is well advanced for the eradication of rats and mice from Lord Howe Island in 2011, to benefit the conservation of endemic flora and fauna including various seabird species. Furthermore, plans are being made to ensure that all NSW offshore islands are free of vertebrate invasive pests by 2011. Given the expected impacts of sea-level rise on low-lying islands, the removal of invasive species from larger offshore islands is the largest single benefit that can be made for seabird conservation in Australia and should be a priority in all States and Territories.

Pictured from left to right:

Flesh-footed Shearwater entering its burrow on Lord Howe Island, one of five IBAs designated for this congregatory seabird. Photo by **Barry Baker**

A Crested Tern colony on the Houtman Abrolhos IBA. Photo by **Andrew Burbidge**

Heard Island (Laurens Peninsula), one of a number of IBAs in oceanic Territories designated for its congregation of seabirds. Photo by **Eric J. Woehler**

Threats to Important Bird Areas

Bird populations are declining at most IBAs, and significant threats were identified at all except nine of the 314 IBAs. The main challenges to the conservation of birds are invasive species, development pressure, overgrazing, inappropriate fire regimes and climate change, all of which interact to some extent. Certain threats can easily be addressed at the IBA site itself, through actions such as fencing, management of fire and invasive species. Other threats, such as addressing water shortage and climate change, need action at a regional, national or global level.

Identifying threats

An accurate assessment of underlying threats is required before conservation action is undertaken at IBAs. Some threats to IBAs are well known. However, for many IBAs the project has extrapolated from similar but better known sites for threat analyses. For each IBA, the project has, as far as possible, identified all significant threats and assessed their scale and severity. The assessment includes an estimation of timing – that is, whether the threat is current or potential. At only nine IBAs were no significant threats identified.

Invasive species on the Australian mainland

Weeds and pest mammals are the best known of the many invasive species that threaten Australian birds. In many cases, the impacts of weeds and pests accumulate slowly over time and exacerbate other threats such as fires or over-grazing. The impacts can be slow and difficult to pinpoint as key threats. Weeds and pests are likely to have negative impacts on most birds and IBAs, but some extreme examples include:

- Rats, cats and foxes that prey on ground birds such as nesting seabirds, shorebirds and other ground-nesting species.
- Weeds invading habitats such as tropical floodplains and sand dunes.
- Invasive ants, particularly on Christmas Island where only sustained conservation action is preventing transformation of the island's ecology by Yellow Crazy Ants.

A handful of native bird species have become a problem in human-modified environments. These include two corella species and the Galah out-competing the Carnaby's Black-Cockatoo for limited nesting hollows in IBAs in the Western Australian wheatbelt and the Yellow-throated Miner hybridising with the Black-eared Miner in the Riverland Mallee IBA of NSW and South Australia.

Actions to address these threats include the focus by community-based organisations, natural resource management groups and government agencies on weed control, the eradication of feral mammals from islands by government agencies, and the control of problem Galahs by farmers.

Development pressure

Pressure from human activity has been identified as a threat at many IBAs. Human activity impacting on IBAs is most commonly caused by recreation activities (91 IBAs), mining and energy and housing and urban development. These impacts are particularly acute at coastal IBAs in southern and eastern Australia. Recreational impacts are very widespread in IBAs, but have less severe effects than the habitat loss caused by mining and the clearing of native vegetation for urban development. Appropriate offsets, sensitive development, rehabilitation and recreational use can all help to ameliorate impacts from development.

Grazing, logging and agricultural pressure

Grazing by cattle or sheep affects 72 IBAs and logging affects 25. An additional four IBAs are affected by plantations and seven by marine aquaculture. Grazing can affect the structure of the understorey, fire management, regeneration and seed availability while logging can reduce the availability of hollows for nesting. The land managers at some of these sites are working hard to maintain conservation values and can balance their economic wellbeing with that of the birds in the IBA. Even much-altered agricultural land can have benefits. Many of Australia's Sarus Cranes migrate each year to the fields of the Atherton Tablelands and feed among peanut and maize stubble. IBA designation can show where collaborative management is most needed.

Fire

Some Australian birds have adapted to live with fire but not at its current and projected extent, intensity and frequency. In parts of northern Australia, fire has increased because changes to traditional land management have resulted in the use of extensive hot late dry season fires. This is being addressed by promoting a return to traditional burning regimes that break up the fuel load with small cool fires early in the year.

In southern Australia, fire has increased because of drought and inappropriate fire management, exacerbated by climate change. The large mallee IBAs in South Australia and Victoria have been burned so frequently in the 2000s that species such as Mallee Emu-wren are increasingly restricted

to precariously small and isolated populations. This can be addressed by adequately resourced fire strategies based on sound ecological principles.

Some bird species such as the bristlebirds of heathlands require regular fires to maintain appropriate habitat structure and vegetation communities. Long-term suppression or prevention of fires may threaten these species.

Climate change

Climate change is likely to impact all IBAs to some extent in the coming decades and beyond. The consequences for biodiversity include temperature increases beyond those tolerated by some species, changes in average annual rainfall (especially reduced rainfall in southern Australia) changes in fire regimes with more extreme fire weather days, higher sea surface temperatures, changes in ocean currents and rising sea levels. Impact will also depend on where each IBA is located, as different regions within Australia will be affected to varying degrees.

Some impacts on birds are already evident. These include range shifts, including shifts in the boundaries of a number of species, and expansions of several bird species to higher elevations. Modelling techniques can predict range shifts of those species likely to be affected. The Grey-headed Robin, for example, is predicted to decline to extinction if temperatures rise by 5°C. Other species likely to be significantly affected include seabirds and shorebirds that breed on beaches or low-lying cays, wetland-dependent species in southern Australia, and species restricted to higher rainfall areas in the south west, south east and Tasmania (particularly species that are relatively poor dispersers such as scrub-birds and bristlebirds).

It is too early for studies to have been conducted on the effects of climate change on Australian IBAs. A study of African IBAs found that species turnover is likely to vary regionally and will be substantial at many sites. Persistence of suitable climate space across the network as a whole, however, is notably high, with approximately 90 per cent of priority species retaining suitable climate space in at least one IBA in which they are currently found. The degree to which the African predictions might be relevant to Australia is unknown.

Top: Cattle grazing contributes to the on-going and progressive degradation of wetlands. Photo by **Chris Tzaros**

Centre: A control burn in savanna woodland in the Kimberley, where inappropriate fire regimes are thought to have contributed to the decline of many species including the threatened Gouldian Finch. Photo by **Richard Kingsford, Australian Wildlife Conservancy**

Below: A feral rat taking chicks from a bird's nest. Feral rats are known to have contributed to the decline of birds on islands all over the world. Photo courtesy of **Nga Manu Images**

Monitoring and conservation of Australia's Important Bird Areas

Once identified, each IBA requires regular monitoring or assessment to ensure that its conservation values are retained. In Australia, most IBAs are designated for threatened species or for globally significant populations of congregatory waterbirds or seabirds. The next stage of looking after IBAs involves conservation advocacy and action to protect and manage sites for these species in perpetuity.

Most IBAs need conservation action and anyone can help to conserve them

IBAs can be the focus of local 'citizen science' initiatives of local communities or individual people, or their monitoring may be the target of land managers such as government agencies or larger non-government organisations.

Monitoring and evaluation is a vital step in ensuring the effective conservation of IBAs. It indicates whether bird populations are stable, increasing or decreasing and can be linked to the causes of change and the effects of management actions. Monitoring is also an important way of raising the profile of IBAs and their conservation.

There are many active monitoring schemes active across Australia (see *The State of Australia's Birds* reports) but few are large-scale or long-term. Undertaking simple but rigorous monitoring across a suite of IBAs is a powerful tool for assessing the trends and needs of Australia's vulnerable and irreplaceable birds. Birds Australia encourages everyone to help monitor IBAs.

Conservation

Bird conservation is the means by which healthy bird populations are maintained for future generations. Conservation may involve passive support for existing land management or may require active interventions to address specific threats. All levels of government have responsibility for the regulation and enactment of conservation activities. Non-government organisations play important roles in providing assistance and critical advice and, where resources are available, taking the lead in action. All conservation actions require the support of the wider public, so everyone can play a role as participants or supporters.

The contribution of Regional Groups

Birds Australia Regional Groups supported the IBA project through the process of identifying and designating IBAs and are now involved in monitoring them.

"The Birds Australia Southern Queensland group sees IBAs as an ideal target for our longer field trips. Our members are very keen to travel across the region, even to distant locations, if their birdwatching efforts are used for science and conservation. We are establishing long-term monitoring projects at most of our IBAs and intend to return regularly to count birds and assess whether numbers are increasing or decreasing. These visits help promote the values and conservation needs of our IBAs to local communities."

Dez Wells, Convenor, Birds Australia Southern Queensland

What actions need to be taken for Australia's IBAs?

Australians need to know about IBAs: what they are and why they are important. Overseas, IBA conservation successes have highlighted the value of building a constituency for IBA conservation among a broad spectrum of stakeholders. Constructive dialogue with the landholders is essential. Internationally, groups of people supporting conservation at an individual IBA have made great improvements to many IBAs.

Where local landholders are supportive, birdwatching tourism can bring financial benefits and raise local awareness of the values of IBAs. The Australian IBA project has worked with Energy Resources of Australia to train local guides and promote birdwatching tourism in IBAs around Kakadu, so that local Indigenous communities can benefit financially from the birds on their traditional lands.

Right: IBA landholder Alison Doley helping to monitor the health of a Carnaby's Black-Cockatoo chick on her farm in the WA wheatbelt. Photo by **Rick Dawson**

Below: Volunteer monitoring beach-nesting Hooded Plovers. Photo by **Chris Tzaros**

Prioritising the need for conservation action at IBAs

IBAs are already a priority list of globally important sites, but it may be useful to prioritise where actions need to be taken. Initially, this can be based on the IBAs' uniqueness and vulnerability:

- **Unique IBAs are those with birds that occur nowhere else. These include the Arnhem Plateau, Clarke Range, Two Peoples Bay & Mount Manypeaks, Christmas Island, Norfolk Island and Lord Howe Island IBAs.**
- **Some IBAs harbour birds at extreme risk. These are IBAs with Critically Endangered birds; they include the Christmas Island, Norfolk Island, Melaleuca to Birchs Inlet IBAs and non-breeding sites for the Orange-bellied Parrot.**
- **Some IBAs are under extreme threat. These include the Macquarie Island IBA and wetlands suffering low water inflows (for example the Coorong, Gwydir Wetlands, Lowbidgee Floodplain and Macquarie Marshes IBAs).**

Ultimately, actions at IBAs need to be prioritised based on the opportunities, practicality, feasibility and cost benefit of delivering positive conservation results. Examples of priorities include actions offering significant benefits from relatively simple interventions, those that avert high levels of risk, or those that are able to take advantage of support, especially from local stakeholders and communities.

The contribution of private landowners

The Doley family has farmed* Koobabbie, *near Coorow in Western Australia for decades, but it was only in the 1980s that they realised that their Carnaby's Black-Cockatoos were possibly threatened with extinction. Since then, the Doleys have worked actively to conserve the birds on their property by fencing remnant vegetation from grazing stock and regularly controlling nest competitors such as Galahs and corellas. Alison Doley is very enthusiastic about the IBA status of* Koobabbie *and the global conservation significance of their farm. "I'm very proud', said Alison, 'and it would be wonderful if this led to an increase in funding for monitoring, as this is the only way we can tell if the birds are doing well, or if there are problems developing."

Alison Doley, private landholder, Western Australian wheatbelt

Next steps for the Australian IBA project

Birds Australia has identified 314 sites of global significance for birds. Over the next phase of the project we will:

- **Assess the monitoring status of each IBA.**
- **Identify a long-term monitoring plan for all Australian IBAs.**
- **Consult with landholders and identify conservation requirements for IBAs.**
- **Prioritise the need for conservation action at IBAs.**
- **Continue to gather and disseminate information about IBAs.**
- **Undertake community education programs, working with local and regional groups to establish IBA 'support groups'.**
- **As new information becomes available, continue to solicit IBA nominations for sites that meet the criteria.**

Helping with IBA conservation and monitoring

Birds Australia encourages you to help monitor and conserve IBAs. To help, you can:

- **Publicise: share this report with friends and colleagues; become familiar with the IBA website and send the web link to interested people.**
- **Champion: publicise the value of your IBA to local people and government; talk to your community – to neighbours, friends, schools or special interest groups.**
- **Join a team: join or create a local IBA support group or a larger regional group.**
- **Observe and monitor an IBA: volunteer to monitor an IBA.**
- **Practical conservation: volunteer for a revegetation project in an IBA.**
- **Climate consciousness: reduce your carbon footprint.**
- **Sponsor: donate to Birds Australia or a local IBA support group.**
- **Politics: campaign and vote for conservation.**
- **Adopt an IBA.**

How can I help?

Email ibas@birdsaustralia.com.au and offer to help or go to the website at www.birdata.com.au/iba.vm and read about the IBAs that interest you. You can also call the Birds Australia office on 1300 730 075.

Important Bird Areas in New South Wales and the Australian Capital Territory

The 45 IBAs covering 14 per cent of NSW and the ACT include many large IBAs. The Greater Blue Mountains IBA is designated primarily for Rockwarbler. Most individuals of the threatened Superb Parrot, Rufous Scrub-bird, Eastern Bristlebird and Regent Honeyeater occur within IBAs in this State. New South Wales shares three IBAs with Queensland, three with Victoria and one with South Australia.

From below left to right:
In NSW and the ACT, 15 wetlands provide critical habitat for a number of key IBA species. Photo by **Glenn Ehmke**
Painted Honeyeater, a globally Vulnerable species contributing to the designation of 12 IBAs. Photo by **Chris Tzaros**
Rockwarbler, a restricted-range species contributing to the designation of four IBAs in NSW. Photo by **Chris Tzaros**

Regent Honeyeater

The Endangered Regent Honeyeater shows some of the strengths and weaknesses of IBA mapping. Some significant areas for the species are outside the conservation estate. These include the Barraba-Bundarra, Capertee Valley and Hunter Valley IBAs, all highlighted for conservation action on private land. The Regent Honeyeater is too poorly known and travels too widely and unpredictably, especially in the non-breeding season, to enable a comprehensive set of IBAs to be designated. More survey work is needed alongside conservation action at these IBAs.

South-west Slopes

The South-west Slopes IBA is the largest in Australia, more than 2.5 million hectares in extent. IBAs are usually identified as individual sites, often remnants of native vegetation, that are suitable for a single monitoring and management plan. However, the Vulnerable Superb Parrot utilises the whole landscape of woodland, agricultural and grazing land, and many nest in isolated paddock trees in farmland. A very large IBA has thus been identified around all of the core breeding area. Two other large IBAs have been designated for Superb Parrot: Barmah-Millewa on the Murray and two stretches of the Murrumbidgee River, both of which include additional critical habitat for the species. Within all of these IBAs there are significant opportunities for conservation action on private land.

IBAs for restricted-range species

Any protected area supporting more than five per cent of the population of a bird with a small geographic range is designated as an IBA. The Blue Mountains, including Wollemi and adjacent National Parks, is designated as an IBA for the Rockwarbler, a species endemic to NSW, and the Australian Alps, an IBA sharing boundaries with Victoria, is designated for the Pilotbird, a species extending south to Melbourne. Bird conservation needs to be included in the management objectives for these National Parks, which also protect important populations of other bird species.

Plains-wanderer in the Riverina

The boundaries of the Riverina Plains IBA mirrors habitat mapped as suitable for the Endangered Plains-wanderer. Suitable habitat consists mostly of grazed native grassland but also land that has been cropped but has the potential to be restored. Monitoring and conservation of the Riverina Plains IBA will be conducted with the support of local landholders.

Rufous Scrub-bird

All five populations of the Vulnerable Rufous Scrub-bird are in national parks, but the species continues to decline. IBA designation helps to highlight the need for improved research into the threats and management actions for this species. The Rufous Scrub-bird occurs at high altitudes and may be susceptible to climate change.

Important Bird Areas in New South Wales and the Australian Capital Territory

The IBAs of New South Wales and the Australian Capital Territory organised by category. Categories comprise groups of key species for which IBAs are nominated. IBAs marked with an asterisk (*) share boundaries with another State. For a full list of NSW and ACT IBAs and key species go to www.birdsaustralia.com.au/our-projects/iba-results.html

Seabird island species	Cabbage Tree & Boondelbah Islands; Lord Howe Island
Resident waterbirds	Barmah-Millewa*; Bulloo Floodplain*; Fivebough & Tuckerbil Swamps; Griffith Wetlands; Gwydir Wetlands; Hastings-Macleay; Hunter Estuary; Lake Bathurst; Lake Wollumboola; Lowbidgee Floodplain; Macquarie Marshes; Menindee Lakes; Narran Wetlands; Paroo Floodplain & Currawinya*; Tuggerah
Migratory shorebirds	Fivebough & Tuckerbil Swamps; Hunter Estuary; Macquarie Marshes; Menindee Lakes; Paroo Floodplain & Currawinya*; Tuggerah
Mallee birds	Central NSW Mallee; Goonoo; Riverland Mallee*; Southern NSW Mallee
Threatened woodland birds	Barmah-Millewa*; Binya & Cocoparra; Brisbane Water; Bundarra-Barraba; Capertee Valley; Goonoo; Hastings-Macleay; Hunter Valley; Lake Macquarie; Mudgee-Wollar; Murrumbidgee Red Gums; Pilliga; Richmond Woodlands; South-west Slopes of NSW; Tuggerah; Ulladulla to Merimbula
Rainforest birds	Barrington Tops & Gloucester Tops; Gibraltar Range; New England; Nightcap Range; Scenic Rim*; Werrikimbe
Other	Australian Alps* (Pilotbird); Budderoo & Barren Grounds (Eastern Bristlebird); Bulloo Floodplain* (Grey Grasswren); Greater Blue Mountains (Rockwarbler); Jervis Bay (Eastern Bristlebird); Lord Howe Island (Lord Howe Woodhen); Nadgee to Mallacoota Inlet* (Eastern Bristlebird); Riverina Plains (Plains-wanderer); Scenic Rim* (Eastern Bristlebird)

Important Bird Areas in the Northern Territory

The 31 IBAs covering six per cent of the Northern Territory are mostly in the Top End. The Northern Territory has many large IBAs designated for waterbirds; the Arnhem Plateau IBA has been designated for endemic species and several large IBAs have been identified for the Red Goshawk and Gouldian Finch. A small number of inland wetlands and seabird islands have been designated in the Northern Territory. The Northern Territory shares one IBA with Queensland and one with Western Australia.

A few large IBAs

Wetland and seabird IBAs are easily delineated but there may not be clear boundaries for IBAs in extensive savanna or in semi-arid and arid habitats. The boundaries of the Arnhem Plateau IBA were defined by the habitat suitable for the Vulnerable White-throated Grasswren. The whole of the Tiwi Islands has been designated as an IBA for the Vulnerable Red Goshawk. Kakadu National Park's savanna was defined as an IBA for the Red Goshawk and Gregory National Park for the White-quilled Rock-Pigeon and Yellow-rumped Mannikin. These IBAs follow National Park boundaries because these protected areas have greater potential for sympathetic land management and long-term bird conservation than areas outside the existing conservation estate.

Few IBAs in the arid zone

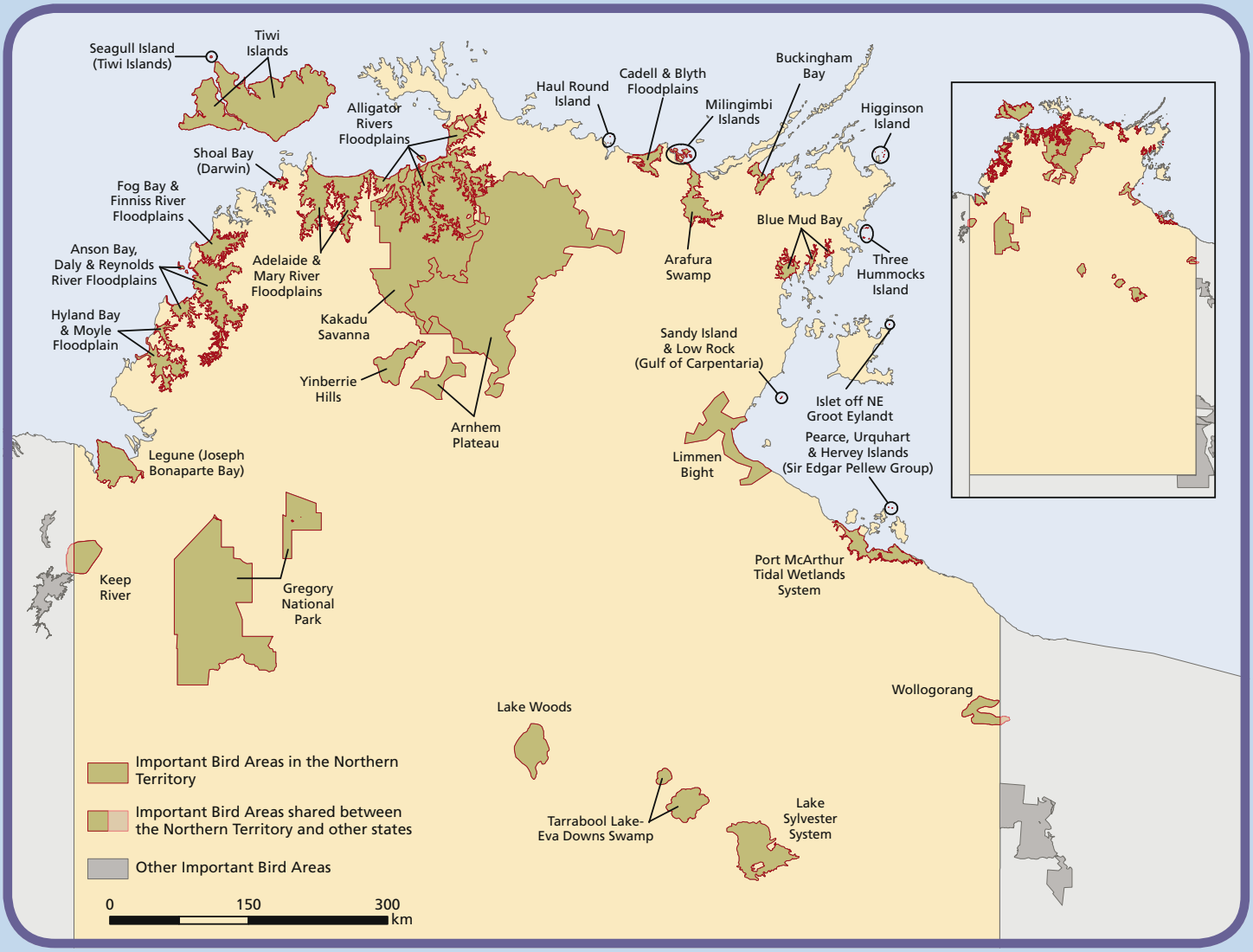
The maps show few IBAs in the Australian arid zone, especially in the Northern Territory, Western Australia and western South Australia. Remote areas in Australia are important for bird conservation but it is difficult to identify IBAs because:

- Few sites in these areas meet IBA criteria. Few arid zone birds are threatened or endemic to small areas. There are few wetlands in these low rainfall areas, except for the Channel Country and some rarely flooded salt lakes.
- Most of remote Australia is continuous native habitat. Although parts of it may be degraded, they are still used by arid zone birds. It is difficult to identify particular areas as IBAs.

Remote area birds may be better conserved by landscape-level actions rather than IBA site-scale actions. This is partly because many remote area birds are resource nomads, ranging over vast areas tracking rainfall and food resources.

Arid zone birds are poorly represented in conservation planning, including this IBA project, and need more research to determine their true status and the most appropriate larger-scale conservation actions. This is particularly true for rare, sparsely distributed species like the Princess Parrot.

Important Bird Areas in the Northern Territory



The IBAs of the Northern Territory organised by category. Categories comprise groups of key species for which IBAs are nominated. IBAs marked with an asterisk (*) share boundaries with another State. For a full list of Northern Territory IBAs and key species go to www.birdsaustralia.com.au/our-projects/iba-results.html

Seabird island species	Haul Round Island; Higginson Island; Islet off NE Grooyte Eylandt; Pearce; Urquhart & Hervey Islands (Sir Edward Pellew Group); Sandy Island & Low Rock (Gulf of Carpentaria); Seagull Island (Tiwi Islands); Three Hummocks Island
Resident waterbirds	Adelaide & Mary River Floodplains; Alligator Rivers Floodplains; Anson Bay; Daly & Reynolds River Floodplains; Arafura Swamp; Blue Mud Bay; Buckingham Bay; Cadell & Blyth Floodplains; Fog Bay & Finniss River Floodplains; Hyland Bay & Moyle Floodplain; Lake Sylvester System; Lake Woods; Legune (Joseph Bonaparte Bay); Limmen Bight; Milingimbi Islands; Tarrabool Lake-Eva Downs Swamp System
Migratory shorebirds	Adelaide & Mary River Floodplains; Alligator Rivers Floodplains; Anson Bay; Daly & Reynolds River Floodplains; Arafura Swamp; Buckingham Bay; Cadell & Blyth Floodplains; Fog Bay & Finniss River Floodplains; Lake Sylvester System; Limmen Bight; Milingimbi Islands; Port McArthur Tidal Wetlands System; Shoal Bay (Darwin); Tiwi Islands
Top End and Kimberley endemics	Arnhem Plateau; Gregory National Park; Kakadu Savanna; Tiwi Islands; Yinberrie Hills
Other	Kakadu Savanna (Red Goshawk); Keep River* (Gouldian Finch); Lake Sylvester System (Flock Bronzewing); Tiwi Islands (Red Goshawk); Wollogorang* (Carpentarian Grasswren); Yinberrie Hills (Gouldian Finch)

Clockwise from top left:

Partridge Pigeon, a restricted-range species in a number of IBAs in the Northern Territory and Western Australia. Photo by **Graeme Chapman**

Lake Woods IBA, the northern delta in flood. Photo by **Roger Jaensch, Wetlands International**

Pied Heron, a congregatory waterbird contributing to the designation of nine IBAs, all in the Northern Territory. Photo by **Guy Dutson**

Important Bird Areas in Queensland

The 53 IBAs covering five per cent of Queensland are mostly coastal or located in the far west. Coastal IBAs include many on the Great Barrier Reef, several for shorebirds and a number of IBAs across suitable areas of forest in the far south-east and the Wet Tropics. IBAs have been identified for the Carpentarian and Eyrean Grasswrens in the west and for waterbirds in the Channel Country. Much of the central Queensland brigalow and grasslands lack species that trigger IBA status. Queensland shares three IBAs with New South Wales, one with the Northern Territory and one with South Australia.

Channel Country

The Channel Country of south-west Queensland and neighbouring areas of NSW and South Australia could be considered as Australia's continental waterbird breeding factory, especially since the decline of the Murray Darling Basin wetlands. After good summer rainfall in the catchment headwaters of Queensland, rivers flow inland and fill ephemeral lakes, channels and floodplains in otherwise arid country. Lakes and sections of swampy floodplain with high concentrations of waterbirds have been designated as IBAs based on recent aerial and ground surveys by waterbird specialists. Nine IBAs support one per cent of the global populations of waterbirds, particularly the colonial breeders, and all periodically support in the order of 100,000 waterbirds. These are the Bulloo Floodplain, Coongie Lakes, Cooper Floodplain below Windorah, Diamantina Floodplain, Goyder Lagoon, Lake Machattie, Lakes Muncoonie, Mumbleberry & Torquinie, Lake Yamma Yamma and Paroo Floodplain & Currawinya IBAs.

Great Barrier Reef

Large numbers of seabirds nest across the vast Great Barrier Reef although many islands there are poorly surveyed and monitored. The limited monitoring information suggests that seabird numbers are declining across the Reef. All islands believed to support more than one per cent of the world population of Pied Imperial-Pigeon, boobies, frigatebirds, terns or noddies have been identified as IBAs. Neighbouring islands were combined into a single IBA where they supported similar species or where individual birds were believed to move between islands.

Moreton Bay and shorebird IBAs

Migratory shorebirds are monitored regularly by the Queensland Wader Study Group. Analysis of their data shows that roosting shorebirds within National Park zones suffered much less disturbance than roosts in less stringent management zones. The main causes of disturbance are dogs, walkers or swimmers, birds of prey, fishing, boating and vehicles. Other shorebirds IBAs are monitored less frequently, some – such as the Gulf Plains IBAs – because they are remote and access is difficult.

Wet Tropics

The rainforests of north Queensland have World Heritage status because of their biodiversity. These rainforests, especially the uplands, support many endemic rainforest bird species, as well as substantial populations of species such as the Southern Cassowary that also occur in New Guinea. Each of the major rainforest blocks in the wet tropics region is designated as an IBA with the cassowary as the principal trigger species. Almost all are fully protected.

The IBAs of Queensland organised by category. Categories comprise groups of key species for which IBAs are nominated. IBAs marked with an asterisk (*) share boundaries with another State. For a full list of Queensland IBAs and key species go to www.birdsaustralia.com.au/our-projects/iba-results.html

Seabird island species	Bountiful Islands; Brook Islands; Cape York to Cape Grenville Islands; Capricornia Cays; Islands North of Port Stewart; Manowar & Rocky Islands; Michaelmas Cay; Piper Islands; Raine Island; Moulter & Maclennan Cays; South Barnard Islands; Stapleton Island; Sudbury Reef; Swain Reefs; Wilson Reef (Great Barrier Reef)
Resident waterbirds	Atherton Tablelands; Broad Sound; Bulloo Floodplain*; Cooper Floodplain below Windorah; Diamantina & Astrebla Grasslands; Diamantina Floodplain; Great Sandy Strait; Gulf Plains; Lake Bindegolly; Lake Galilee; Lake Machattie Area; Lake Yamma Yamma; Lakes Muncoonie; Mumbleberry & Torquinie; Moreton Bay & Pumicestone Passage; Paroo Floodplain & Currawinya; Repulse Bay to Ince Bay; Shoalwater Bay (Rockhampton)
Migratory shorebirds	Broad Sound; Cape York to Cape Grenville Islands; Diamantina Floodplain; Fitzroy Floodplain & Delta; Great Sandy Strait; Gulf Plains; Lake Machattie Area; Lake Yamma Yamma; Lakes Muncoonie; Mumbleberry & Torquinie; Moreton Bay & Pumicestone Passage; Paroo Floodplain & Currawinya; Repulse Bay to Ince Bay; Shoalwater Bay (Rockhampton)
Threatened Woodland birds	Traprock
Rainforest birds	Bunya Mountains & Yarraman; Clarke Range; Coastal Wet Tropics; Conondale Range; Cooloola & Fraser Coast; Daintree; Iron & McIlwraith Ranges; Palmgrove; Paluma; Scenic Rim*; Tamborine Mountain; Wooroonooran
Other	Boodjamulla (Carpentarian Grasswren); Brook Islands (Pied Imperial-Pigeon); Bulloo Floodplain* (Grey Grasswren); Buckley River (Carpentarian Grasswren); Cape York to Cape Grenville Islands (Pied Imperial-Pigeon); Diamantina & Astrebla Grasslands (Plains-wanderer; Night Parrot); Diamantina Floodplain (Grey Grasswren); Islands North of Port Stewart (Pied Imperial-Pigeon); Lake Machattie Area (Grey Grasswren); Lakes Muncoonie; Mumbleberry & Torquinie (Eyrean Grasswren); Lilyvale (Red Goshawk); Lockerbie Scrub (Rainbow Bee-eater; Spangled Drongo); Morehead River (Golden-shouldered Parrot); Piper Islands (Pied Imperial-Pigeon); Scenic Rim (Eastern Bristlebird); Simpson Desert* (Eyrean Grasswren); Staaten River (Golden-shouldered Parrot); Wollogorang* (Carpentarian Grasswren)

Important Bird Areas in Queensland

Left: **The Cooper Floodplain below Windorah. When flooding, this Channel Country IBA is hugely productive for waterbirds. Photo by Roger Jaensch, Wetlands International**

Important Bird Areas in South Australia

The 38 IBAs covering seven per cent of South Australia include many small IBAs, mostly for congregatory birds along the coast. Several IBAs have been identified for Malleefowl and other mallee birds and the endemic Short-tailed Grasswren and Chestnut-breasted Whiteface. Inland, Lake Eyre and Lake Torrens support breeding Banded Stilt when flooded and other ephemeral wetlands support a range of waterbirds. South Australia shares two IBAs with Victoria, one with New South Wales and one with Queensland.

Short-tailed Grasswren and Chestnut-breasted Whiteface

South Australia boasts two restricted-range species found nowhere else in the world. The Short-tailed Grasswren is well represented in the three large National Parks identified as IBAs. Chestnut-breasted Whiteface is not represented in any protected area but three large IBAs on grazing properties have been identified based on best knowledge of its distribution. One of these, the Bulgunnia IBA, is poorly known and further surveys may suggest that a smaller IBA could be defined.

The Coorong and Lower Lakes

The Coorong is a long, shallow lagoon more than 100 km in length that is separated from the Southern Ocean by a narrow sand dune peninsula. Over the duration of the IBA project, the Coorong and Lakes Alexandrina and Albert became icons of the water crisis in the Murray-Darling Basin. During the last two decades, the Coorong's high bird conservation values have declined drastically because of reduced freshwater inflows but it still meets IBA criteria, mostly for the salt-loving Banded Stilt. The lakes retain IBA values, especially along the shores, but are under imminent threat of saltwater drowning. Across the system, numbers of migratory shorebirds and Fairy Terns have collapsed, and the Australasian Bittern may be lost from this wetland system if the lakes become saline.

Lake Eyre and Lake Torrens

The Lake Eyre and Lake Torrens IBAs are located in some of the most arid parts of South Australia. The lakes rarely fill with water but in suitable floods they support huge numbers of breeding Banded Stilt. The stilts in the eastern population spend much of their lives in coastal saline wetlands such as the Coorong, saltworks on Gulf St Vincent and IBAs in Victoria, but are dependent on Lakes Eyre and Torrens for nesting.

Fairy Tern and other seabirds

Fairy Terns have declined so rapidly, especially in South Australia, that in 2008 they were listed as Vulnerable by IUCN/BirdLife International. The current status of other seabirds such as the Black-faced Cormorant is poorly known. Seabird islands and colonies of nesting terns are in need of ongoing monitoring and management.

Clockwise from right:

Banded Stilt at the Coorong.

The Coorong IBA has been declining in productivity for waterbirds due to reduced waterflow.

Most of the 36 IBAs designated for the Vulnerable Fairy Tern are on islands.

Photos by **Glenn Ehmke**

Important Bird Areas in South Australia

The IBAs of the South Australia organised by category. Categories comprise groups of key species for which IBAs are nominated. IBAs marked with an asterisk (*) share boundaries with another State. For a full list of South Australia IBAs and key species go to www.birdsaustralia.com.au/our-projects/iba-results.html

Seabird island species	Goose Island (Spencer Gulf); Investigator Islands; Nuyts Archipelago; Sir Joseph Banks Islands; Troubridge Island; Wedge Island
Resident waterbirds	Coffin Bay; Coongie Lakes; Coorong; Discovery Bay to Piccaninnie Ponds*; Goyder Lagoon; Gulf St Vincent; Investigator Islands; Kangaroo Island; Lake Eyre; Lake Hawdon System; Lake Newland; Lake Torrens; Lakes Alexandrina & Albert; Nuyts Archipelago; Seagull Lake (Eyre Peninsula); Sir Joseph Banks Islands; Southern Yorke Peninsula; Strzelecki Desert Lakes; Tourville & Murat Bays; Venus Bay; Watervalley Wetlands
Migratory shorebirds	Coongie Lakes; Coorong; Gulf St Vincent; Lake Eyre; Lake Hawdon System; Lakes Alexandrina & Albert; Spencer Gulf; Watervalley Wetlands
Orange-bellied Parrot	Coorong; Discovery Bay to Piccaninnie Ponds*; Lake Hawdon System; Lakes Alexandrina & Albert
Mallee birds	Billiatt; Coffin Bay; Gawler Ranges; Gum Lagoon; Kangaroo Island; Peebinga; Riverland Mallee*; Southern Yorke Peninsula; Wyperfeld; Big Desert & Ngarkat*
Other	Boolcoomatta; Bindarrah & Kalkaroo Stations (Plains-wanderer); Bulgunnia (Chestnut-breasted Whiteface); Flinders Ranges (Short-tailed Grasswren); Gammon Ranges & Arkaroola (Short-tailed Grasswren); Gawler Ranges (Short-tailed Grasswren); Goyder Lagoon (Grey Grasswrens); Granite Downs (Chestnut-breasted Whiteface); Mount Lyndhurst (Chestnut-breasted Whiteface); Simpson Desert* (Eyrean Grasswren)

Important Bird Areas in Tasmania

The 43 IBAs covering 18 per cent of Tasmania include a large number of islands, particularly in the Bass Strait and along the south coast, that have been designated for nesting seabirds. Several IBAs have been identified for the Orange-bellied Parrot at its breeding sites and along its migratory route. A number of IBAs have been identified for the migratory Swift Parrot, which nests in different areas in different years. Tasmania shares one IBA with Victoria.

Tasmania's threatened endemics

Three Endangered Australian endemic birds occur in Tasmania. These are the Orange-bellied Parrot, Swift Parrot and Forty-spotted Pardalote. The Orange-bellied Parrot nests in the Melaleuca to Birch's Inlet IBA and migrates through IBAs in the north-west of Tasmania. The Swift Parrot nests in different forests depending on which are flowering, so a large IBA is designated across south-east Tasmania to include all potentially suitable habitat. The Forty-spotted Pardalote occurs in small colonies in Swift Parrot habitat. Much larger numbers of the pardalote occur on Maria and Bruny Islands, which are designated as separate IBAs.

A network of IBAs for Tasmanian endemics

Tasmania supports another 11 species found nowhere else in the world. To help ensure the conservation of a representative network of populations of these species, three large and varied national parks, Cradle Mountain, Ben Lomond and Douglas-Apsley, were designated as IBAs. The massive Southwest and Franklin-Gordon Wild Rivers National Parks have relatively few of these endemic birds.

Seabird islands

Small islands around Tasmania are exceptionally important for seabirds, especially Short-tailed Shearwater, Little Penguin, Black-faced Cormorant and Pacific Gull. Most are difficult to access and out of the public eye but the IBA analysis highlights the importance of improving their protection status and eradicating or preventing colonisation by rats and other pests.

Coastal IBAs

Tasmania's beaches are globally important for the Hooded Plover, Pied Oystercatcher and Fairy Tern. High concentrations of these species have resulted in the identification of a number of small IBAs on the coast. The large IBAs identified for the Orange-bellied Parrot along Tasmania's west coast support large numbers but not necessarily high densities of coastal birds. There are good arguments for designating large IBAs, which may be more resilient to various threats, and small IBAs, that support high densities of birds. Many of Tasmania's beaches are important for bird conservation and those with high levels of human activity need active management.

Clockwise from top left:

Green Rosella, a Tasmanian endemic species, is represented in 13 IBAs. Photo by **Dean Ingwersen**

Tasmanian Native-hen, a Tasmanian endemic. Photo by **Chris Tzaros**

Dove Lake and Cradle Mountain in the Cradle Mountain IBA, an IBA designated for Flame Robin and 11 restricted-range species. Photo by **Dean Ingwersen**

Important Bird Areas in Tasmania

The IBAs of Tasmania organised by category. Categories comprise groups of key species for which IBAs are nominated. IBAs marked with an asterisk (*) share boundaries with another State. For a full list of Tasmania IBAs and key species go to www.birdsaustralia.com.au/our-projects/iba-results.html

Seabird island species	Albatross Island & Black Pyramid Rock; Babel Island Group; Betsey Island; Boxen Island & Big Black Reef; Bruny Island; Chalky; Big Green & Badger Island Groups; Curtis Island; Egg Island (Bass Strait); Forsyth; Passage & Gull Islands; Franklin Sound Islands; Hippolyte Rocks; Hunter Island Group; King Island; Maatsuyker Island Group; Macquarie Island; Mewstone; Night Island (Bass Strait); Ninth & Little Waterhouse Islands; Pedra Branca; Port Davey Islands; Robbins Passage & Boullanger Bay; Shag Reef (Bass Strait); St Helens (Tasmania); Tasman Island; Three Sisters (Bass Strait); Wilsons Promontory Islands*
Resident waterbirds	Cape Portland; Chalky; Big Green & Badger Island Groups; Egg Islands (Huon Estuary); Eastern Flinders Island; Franklin Sound Islands; Hunter Island Group; King Island; Marion Bay; Melaleuca to Birchs Inlet; Moulting Lagoon; North-west Tasmanian Coast; Orford (Tasmania); Robbins Passage & Boullanger Bay; Rubicon Estuary; South Arm; St Helens (Tasmania); Tamar Wetlands
Migratory shorebirds	Robbins Passage & Boullanger Bay
Orange-bellied Parrot	Hunter Island Group; King Island; Melaleuca to Birchs Inlet; North-west Tasmanian Coast; Robbins Passage & Boullanger Bay
Tasmanian endemics	Ben Lomond; Bruny Island; Cradle Mountain; Douglas-Apsley; Hunter Island Group; King Island; Maria Island; Melaleuca to Birchs Inlet; North-west Tasmanian Coast; Robbins Passage & Boullanger Bay
Threatened woodland birds	Bruny Island; Central Flinders Island; Maria Island; South-east Tasmania

Important Bird Areas in Victoria

The 37 IBAs covering 14 per cent of Victoria include many coastal wetlands and a smaller number of inland wetlands. Several large IBAs in the mallee and box-ironbark woodlands have been designated as IBAs for threatened birds. Smaller IBAs have been identified for shorebirds, waterbirds and non-breeding Orange-bellied Parrots. Victoria shares two IBAs with South Australia, one with Tasmania and three with New South Wales.

Box-ironbark woodlands

The Endangered Swift Parrot breeds in Tasmania but migrates to the mainland to over-winter in the non-breeding season. The box-ironbark woodlands of central Victoria are globally important for the species. All remnants that have supported at least 10 Swift Parrots on multiple occasions are included within IBAs. In some years Swift Parrots also forage in the forests of the Great Dividing Range but do not use forest sites as regularly as those in woodlands.

Mallee

In Victoria, South Australia and NSW, the boundaries of several large IBAs have been defined based on the presence of threatened birds of remnant mallee vegetation. In Victoria, nearly all of this mallee is protected but key species, for example the Mallee Emu-wren, are still declining, mostly as a result of inappropriate fire regimes.

Orange-bellied Parrot

In the non-breeding season Victoria supports most of the world population of the Critically Endangered Orange-bellied Parrot. In the past, these parrots regularly returned to the same small saltmarsh sites, all of which are designated as IBAs. Lower numbers have been observed at these sites in the 2000s, raising increased concern for the survival of this species but also suggesting that the birds utilise additional yet-to-be-discovered wintering sites.

Coastal wetlands

In contrast to the inland wetlands, Victoria's coastal wetlands are generally maintaining their values for waterbirds. Monitoring at Port Phillip, Western Port and Corner Inlet suggest that waterbird numbers are stable except for some shorebird species that are declining across Australia. The Gippsland Lakes have declining values, perhaps related to reduced freshwater inflows.

Dry wetlands

In recent years the question has arisen regarding the conservation value of wetlands that have been dry for a number of years. Wetlands such as Lake Buloke, formerly extremely important for waterbirds but not during the drier years of the 1990s and 2000s, have not been designated as IBAs. Many inland wetland IBAs such as Natimuk-Douglas and North Victorian Wetlands are declining in value for birds. Accurate monitoring is needed to help convey the message that these wetlands urgently require restored water flows.

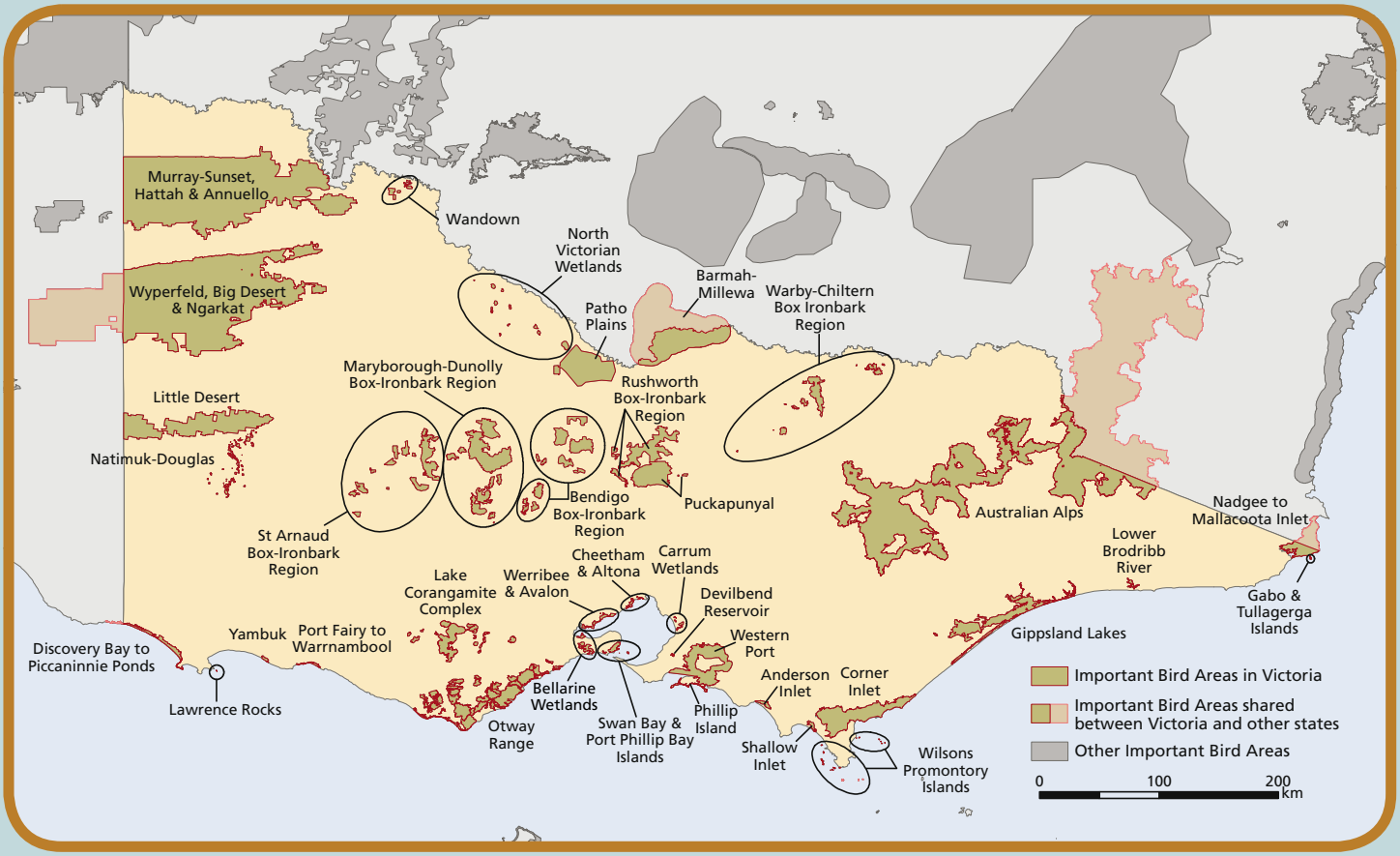
The IBAs of the Victoria organised by category. Categories comprise groups of key species for which IBAs are nominated. IBAs marked with an asterisk (*) share boundaries with another State. For a full list of Victoria IBAs and key species go to www.birdsaustralia.com.au/our-projects/iba-results.html

Seabird island species	Gabo & Tullaberga Islands; Lawrence Rocks; Phillip Island; Wilsons Promontory Islands*
Resident waterbirds	Barmah-Millewa*; Bellarine Wetlands; Carrum Wetlands; Cheetham & Altona; Corner Inlet; Discovery Bay to Piccaninnie Ponds*; Devilbend Reservoir; Gippsland Lakes; Lake Corangamite Complex; Lower Brodribb River; Natimuk-Douglas Wetlands; North Victorian Wetlands; Phillip Island; Port Fairy to Warrnambool; Swan Bay & Port Phillip Bay Islands; Werribee & Avalon; Western Port; Yambuk
Migratory shorebirds	Anderson Inlet; Bellarine Wetlands; Carrum Wetlands; Cheetham & Altona; Corner Inlet; Lake Corangamite Complex; Shallow Inlet; Swan Bay & Port Phillip Bay Islands; Werribee & Avalon; Western Port
Orange-bellied Parrot	Anderson Inlet; Bellarine Wetlands; Corner Inlet; Discovery Bay to Piccaninnie Ponds; Port Fairy to Warrnambool; Shallow Inlet; Swan Bay & Port Phillip Bay Islands; Werribee & Avalon; Western Port; Yambuk
Mallee birds	Little Desert; Murray-Sunset; Hattah & Annuello; Wandown; Wyperfeld; Big Desert & Ngarkat*
Threatened woodland birds	Barmah-Millewa*; Bendigo Box-Ironbark Region; Maryborough-Dunolly Box-Ironbark Region; Puckapunyal; Rushworth Box-Ironbark Region; St Arnaud Box-Ironbark Region; Warby-Chiltern Box-Ironbark Region
Other	Australian Alps* (Pilotbird); Nadgee to Mallacoota Inlet* (Eastern Bristlebird); Otway Range (Rufous Bristlebird); Patho Plains (Plains-wanderer)

Right: Orange-bellied Parrot, one of the world's most threatened bird species, migrates from breeding grounds in Tasmania to over-wintering IBAs on the Australian mainland. Photo by **Chris Tzaros**

Far right: Carrum Wetlands IBA, designated for the Endangered Australasian Bittern and a number of waterbirds, including Blue-billed Duck. Photo by **Andrew Silcocks**

Important Bird Areas in Victoria



Important Bird Areas in Western Australia

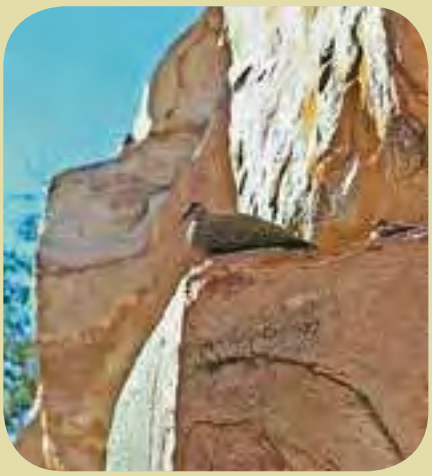
Well over half of the 74 IBAs covering two per cent of Western Australia are located in the south-west where there are several threatened endemic species. IBAs in the north of this large State include several supporting large numbers of shorebirds and waterbirds, and others for the Black Grasswren and other northern species. Many small islands have been designated as IBAs for their nesting seabirds. WA shares one IBA with the Northern Territory.

Australasian Bittern

Western Australia supports a small and declining population of the globally Endangered Australasian Bittern. The IBA project highlighted the lack of recent data for this species, resulting in Birds Australia WA organising surveys in known and suitable locations. These surveys revealed that bitterns survive in at least four sites, all of which have been designated as IBAs.

Carnaby's Black-Cockatoo

The Endangered Carnaby's Black-Cockatoo wanders across a large region from the mouth of the Murchison River to Esperance. IBAs have been identified around known breeding areas in the agricultural zone (the 'wheatbelt') and the most important non-breeding area on the Swan Coastal Plain. Although these are the known hotspots, much is still unknown about population concentrations in the non-breeding season. The cockatoo depends on woodlands, forest and heathland across its range. In its non-breeding range it is threatened by habitat loss, particularly from urban expansion and coastal development.



Kimberley

The Kimberley supports a number of unique birds: the Black Grasswren and several subspecies are found nowhere else in the world. However, it is difficult to define IBAs in this large, poorly-surveyed landscape. Until better survey data are available for the Black Grasswren and other restricted-range species, only one large IBA has been designated, encompassing the large Prince Regent Nature Reserve and neighbouring protected areas.

Important Bird Areas in Western Australia

Opposite page: **White-quilled Rock-Pigeon, a restricted-range species resident in a small number of IBAs in Western Australia and the Northern Territory. Photo by Graeme Chapman**

Below: **Noisy Scrub-bird. Most birds are in a single IBA on the south coast. Photo by Alan Danks**

The IBAs of the Western Australia organised by category. Categories comprise groups of key species for which IBAs are nominated. IBAs marked with an asterisk (*) share boundaries with another State. For a full list of Western Australia IBAs and key species go to www.birdsaustralia.com.au/our-projects/iba-results.html

Seabird island species	Adele Island; Bedout Island; Booby Island (Kimberley); Christmas Island; Eclipse Island (Albany); Houtman Abrolhos; Lacepede Islands; Low Rocks & Sterna Island (Kimberley); Lowendal Islands; Montebello Islands; Quoin Bluff & Freycinet Island (Shark Bay); Recherche Archipelago; Sandy Island (Windy Harbour); Sunday Island (Exmouth Gulf)
Resident waterbirds	Benger Swamp; Busselton Wetlands; Carnac Island (Perth); Dampier Saltworks; Eighty Mile Beach; Exmouth Gulf Mangroves; Faure & Pelican Islands (Shark Bay); Fortescue Marshes; Lake Argyle; Lake Barlee; Lake Gore System; Lake Gregory/Paraku; Lake MacLeod; Lake McLarty; Lake Pleasant View System; Lake Warden System; Lakes Ballard & Marmion; Mandora Marsh & Anna Plains; Montebello Islands; Muir-Unicup Wetlands; Owingup Swamp & Boat Harbour Wetlands; Peel-Harvey Estuary; Pink Lake (Esperance); Recherche Archipelago; Roebuck Bay; Rottnest Island; Towerrining Lake & Moodiarrup Swamps; Two Peoples Bay & Mount Manypeaks; Yalgorup
Migratory shorebirds	Adele Island; Barrow Island; Dampier Saltworks; Eighty Mile Beach; Exmouth Gulf Mangroves; Faure & Pelican Islands (Shark Bay); Lake Argyle; Lake Gregory/Paraku; Lake MacLeod; Lake McLarty; Mandora Marsh & Anna Plains; Peel-Harvey Estuary; Port Hedland Saltworks; Roebuck Bay; Yalgorup
Malleefowl	Dragon Rocks; Dunn Rock & Lake King; Fitzgerald River; Holleton; Karara & Lochada; Karroun Hill; Lake Magenta; Mount Gibson & Charles Darwin
Top End and Kimberley endemics	Mornington Sanctuary; Ord Irrigation Area; Prince Regent & Mitchell River; Wyndham
South-west endemics	Araluen-Wungong; Bindoon-Julimar; Calingiri; Cataby; Coomallo; Dragon Rocks; Dunn Rock & Lake King; East Borden; Fitzgerald River; Gidgegannup; Gillingarra; Jalbarragup; Koobabbie; Kwobrup-Badgebup; Lake Magenta; Moora; Mundaring-Kalamunda; North Dandalup; Northern Swan Coastal Plain; Stirling Range; The Lakes (Western Australia); Two Peoples Bay & Mount Manypeaks; Walebing
Other	Christmas Island (Christmas Island Imperial-Pigeon; Christmas Island Hawk-Owl; Christmas Island White-eye); Fortescue Marshes (Night Parrot); Keep River* (Gouldian Finch); Mornington Sanctuary (Red Goshawk; Gouldian Finch); Wyndham (Gouldian Finch)

Important Bird Areas – key places for bird conservation

Acknowledgements

The Important Bird Area (IBA) program produced this report as a summary of the Australian IBAs researched, databased and designated in 2005–2009. The project's outcomes have been made possible through the collaborative efforts of Australia's ornithological and conservation community.

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IBA materials

Detailed information is available on the project website (www.birdsaustralia.com.au/ibas). Materials that can be downloaded include a GIS shapefile, a Google Earth link and other background materials. Other materials include a map, summary and full fact sheet for each IBA, available at www.birdata.com.au/iba.vm or email ibas@birdsaustralia.com.au

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Photo by **Glenn Ehmke**

Birds Australia (Royal Australasian Ornithologists Union) was founded in 1901 and works to conserve native birds and biological diversity in Australasia and Antarctica, through the study and management of birds and their habitats, and the education and involvement of the community. New members are welcome. Join online at www.birdsaustralia.com.au/join, or phone 1300 730 075.

BirdLife International has a combined membership of over 2.5 million people through a partnership of over 100 national non-government organisations with a focus on bird conservation. Birds Australia is BirdLife International's Australian partner and representative. BirdLife has championed the identification and conservation of IBAs across the world. For BirdLife IBA materials, go to www.birdlife.org

Rio Tinto has supported the development of Australia's Important Bird Area (IBA) program as part of its global Biodiversity Strategy. Rio Tinto's goal is to have a 'net positive impact' on biodiversity – aiming to ensure that biodiversity and its conservation ultimately benefit from its presence in a region. In addition to programs that focus on the impact of its operations, the Group also seeks to assist conservation initiatives, such as the IBA project, that support local, national and global conservation priorities. Rio Tinto has worked with Birds Australia for several years as a part of its global partnership with Birdlife International. For more information visit www.riotinto.com

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