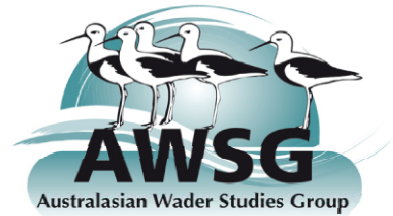




CARING
FOR
OUR
COUNTRY



What is the Shorebirds 2020 National Shorebird Monitoring Program?

There is increasing evidence that migratory shorebird populations throughout the world are declining. Shorebirds using the East-Asian Australasian Flyway are under threat from widespread habitat destruction, especially prevalent at staging areas in East Asia. Australia, home to 38 species of overwintering migratory shorebird during the non-breeding season, is uniquely placed to assess the impacts of these threats on shorebird numbers.

Shorebird population declines, and the threats to their survival, need to be documented in order to advocate more successfully for their conservation. Groups such as the Australasian Wader Studies Group (AWSG), Queensland Wader Study Group (QWSG), Bird Observation and Conservation Australia (BOCA), the Hunter Bird Observers Club (HBOC), and a number of other qualified groups, have been monitoring shorebird populations at a number of important sites around Australia for over 25 years.

Shorebirds 2020 is a program designed to reinvigorate and coordinate national shorebird monitoring in Australia. Shorebirds 2020 is a collaborative enterprise between Birds Australia and the Australasian Wader Studies Group (AWSG), with part funding from the Australian Government's Caring for Our Country.

The primary objectives of the Shorebirds 2020 program are to:

- collect data on the numbers of shorebirds, in a manner that:
 - will be utilised to aid conservation and management of shorebirds
 - encompasses long- and short-term population trends
 - seeks to understand the relationship between habitat quality and threats to the distribution and abundance of shorebirds
- increase the number of volunteers involved in shorebird monitoring
- improve counting methods and counter training
- increase the number and geographic representation of regularly monitored sites
- conduct scientific analysis and reporting of shorebird population trends

How to get involved

To register your interest in the Shorebirds 2020 project, your first point of call should be the website www.shorebirds.org.au. The website provides a wealth of information on bird identification and counting methods, a list and maps of all of the monitoring sites around the country, and a count schedule with a list of regional coordinators and contacts for areas that are currently monitored. You can also directly contact representatives of the Shorebirds 2020 team at the Birds Australia National Office. Refer to the contact details at the end of this document.

The most common way to become involved is to assist with counting and identifying birds. However, there are various other non-birding duties including scribes/note takers, and count coordinators. We also require volunteers to help with data entry at the Birds Australia national office in Melbourne.

How to do a Shorebird count

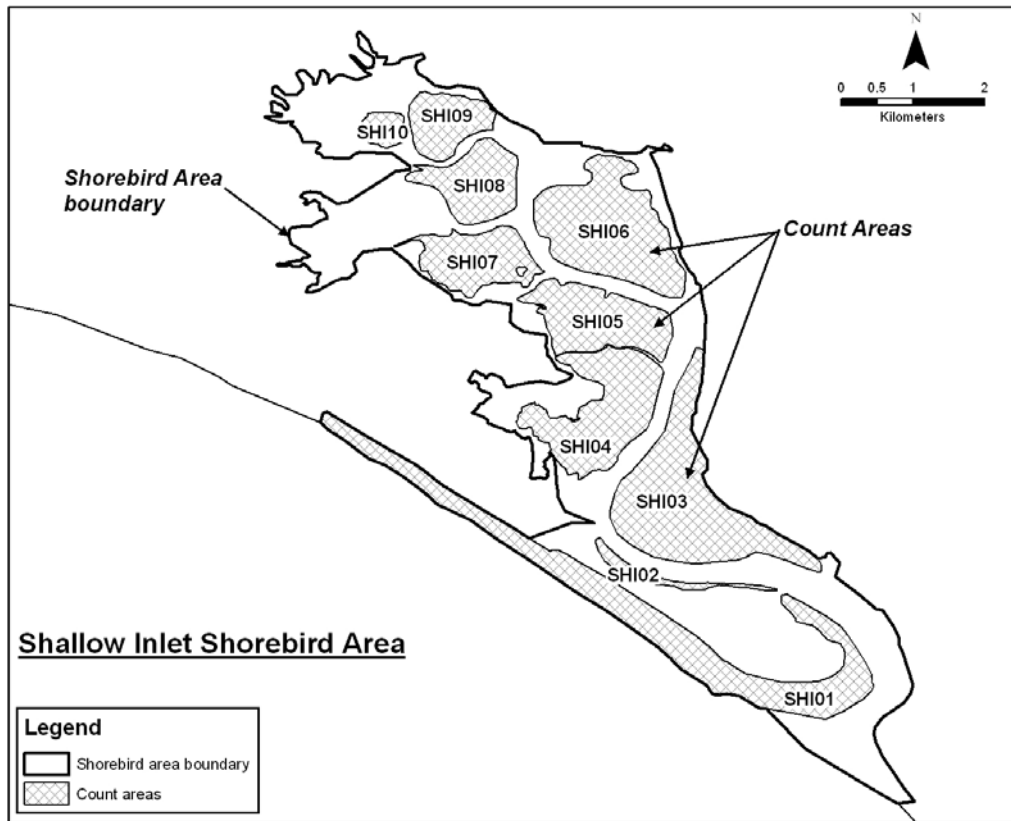
Counts involve counting shorebird populations, biannually at sites throughout Australia. Each site, known as a *Shorebird Area*, is divided up into smaller areas, known as *Count Areas*.

The difference between a Shorebird Area and a Count Area

A *Shorebird Area* or *Site* is defined as an entire area of contiguous habitat used by the same group of shorebirds. Within these areas, birds move around between multiple roosting and feeding sites. Therefore ideally, the boundary of a *Shorebird Area* should correspond to the non-breeding home range of a group of

migratory shorebirds while they are here in Australia, and as such, all parts of this area should be surveyed at the same time.

Count Areas are the smaller areas within *Shorebird Areas*, such that when all counted, collectively make up the count for the total *Shorebird Area*. They are often small, discrete areas that cover the main roosting and feeding areas where most of the birds are likely to be found.



Map of the Shallow Inlet Shorebird Area. The boundary of the *Shorebird Area* (black line), encompasses all of the smaller *Count Areas* (grey areas). There is known movement between these smaller areas, within the overall *Shorebird Area*. These smaller *Count Areas* are counted individually on the day of population monitoring counts, and collectively they make up the total count for the *Shorebird Area*.

A complete up-to-date list and maps of Australian *Shorebird Areas* and their corresponding *Count Areas* is available online at www.shorebirds.org.au.

Why are sites divided up into *Shorebird Areas* and *Count Areas*?

In general, the overall count of the *Shorebird Area* (assuming that the area was completely covered), is the most important aspect when analysing shorebird population trends. However, there are a number of other reasons that make the collection of data on a smaller scale (i.e. *Count Areas*) highly valuable, including:

- It is logistically easier to simultaneously count smaller areas as opposed to one large area
- Reduces variation in counts done by different counters, by counting within specified boundaries. Counting in this way will increase the sensitivity of scientific analysis of shorebird population trends
- Corrections can be made for incomplete or varying coverage across years
- Identifying when an individual roost site is being impacted within a *Shorebird Area*
- Habitat Analysis. Examples include:
 - how the characteristics of different habitat qualities impact on shorebird numbers
 - how the size of roosting areas affects shorebird numbers
 - determining the relationship of distance between feeding and roosting areas
 - how mangrove encroachment effects shorebird numbers
 - how *Spartina spp.* invasion impacts on shorebird numbers
 - determining the differences in habitat between areas used by shorebirds for roosting and or feeding and other areas that seem suitable but are not being used

When is the best time to count?

The Shorebirds 2020 project aims to collect count data for a minimum of one summer count, usually in the first half of February, and one winter count in June/July. Carrying out (at least one) repeated counts over the summer is very valuable as it helps get an accurate count of the actual number of birds using an area (for example, if numbers are below normal in one count due to poor weather), and also helps to reduce variation at sites from one count to the next, hopefully improving our ability to detect population trends at individual *Shorebird Areas*. This is why we also recommend additional counts in January, December and November (in order of importance).

Ideally, all counts would be done throughout the country on the same day (keep up-to-date with the count schedule at www.shorebirds.org.au), over the four hours around high tide (two hours before, and two hours after high tide). Conducting counts on the same day (particularly at adjacent areas) means that counts are much less affected by movements of birds between areas, therefore improving our population estimates and ability to detect national trends. However, variations in tidal and weather conditions often do not allow for this, and so we encourage counts to be done as close to the national count date as possible.

There are other areas that will need to be counted more frequently, and we will be recommending count frequencies for those areas as the need arises, and our understanding of the benefits of multiple counts grows. However, we encourage counters to do more counts at regular intervals throughout the year if they wish to do so. Every bit of data helps! If you want to highlight the importance of a specific, local area for shorebirds, then we suggest that you conduct multiple counts throughout the year. Please contact the Shorebirds 2020 team at the Birds Australia national office if you would like further advice on how to do this in your area.

Choosing an area to count

Fixed Count Areas

It is estimated that we will need to count shorebirds at around 150 sites nationally, in order to be able to detect population trends at the national level for the majority of shorebird species. Choosing an area to do a shorebird count is easy. Maps of all of the *Shorebird Areas* and their corresponding *Count Areas* are available at www.shorebirds.org.au. All you have to do is select an area you would like to count, and then download the map for that area. Some of these areas take large coordinated teams to count, while others can be done in an easy solo day trip, or even a couple of hours. Before your set off to do a count, you are advised to make contact with the regional coordinator for the site.

The maps are a guide to the *Count Area(s)* that you should be counting. *Count Areas* are fixed area counts. It is important that you count all of, but not more than, the area marked for each of the *Count Areas* on the map. Please do not combine counts for multiple *Count Areas*. If you count an area outside of the areas defined by *Count Area* boundaries, record them separately and please provide a detailed map of the area covered.

In order to monitor shorebird populations accurately, it is critical that the same technique is followed on each count, so that the only obvious difference in the number of shorebirds counted is related to the number of shorebirds in the area, and not the way it was counted.

Counting a new site

It is possible that a *Shorebird Area* you want to monitor is one that is not currently being monitored by others. Generally speaking, any wetland, estuary, mudflat, or sewage treatment plant may be suitable habitat for shorebirds. In this case you should contact the Shorebirds 2020 team at the Birds Australia national office to let them know you are keen to start monitoring at one of these *Shorebird Areas*. If you do count a new site, please make sure that you provide us with some additional details, including a GPS location, and a detailed map of the boundary of area that was counted.

Counting a Random Area

As part of the project, there are also 330 randomly selected areas that we would like to collect data on. Half of these random areas are known to have recorded shorebirds, while the other half are simply random points selected within wetlands. Many of these areas are remote, inland, and/or ephemeral wetlands that are rarely visited. Collecting data on shorebirds in these areas will increase the geographic coverage of shorebird

surveys, which will be extremely valuable in increasing our understanding of the distribution and characteristics of habitats used shorebirds in Australia.

Each random area is a point location with a 5km radius search area, which should be easy for one counter to cover the entire area in a day. Ideally we would like counts to be conducted at as many of these sites as possible on an annual basis.

Recommendations for conducting a count:

For most sites, we recommend a count is done during the 4 hours around high tide (two hours before, and two hours after). Some sites are best counted during other or very specific tidal conditions. The following are general recommendations for when to count if no additional information is available:

- Conduct counts at high tide when shorebirds are congregated together
- Conduct counts while the sun is at your back, or facing away from you
- Avoid counting during significant rainfall and/or strong winds
- In areas with large numbers of birds, ideally three people should count together, with one person to scribe data, and two to agree on counts. Smaller areas can be adequately covered by one person.
- Fill out an entire form and record the number of birds seen, *no matter how low the total is or even if no shorebirds were seen.*
- If possible, do component counts in areas where there are more than 5,000 birds present (see below)
- Census accuracy - Please do not include any estimates of birds that you cannot actually see (i.e. % of flock believed to be hidden in the dunes). Instead, please add how many birds you think you might have missed in the *Comments*.
- Only include the birds that you have identified. Thus, if you identify 100 Curlew Sandpipers from among 5,000 shorebirds, and cannot confidently identify the remainder, please record them as 100 Curlew Sandpipers and 4,900 unidentified small waders.

Component Counts

We are also encouraging volunteers within each area with over 5000 shorebirds to conduct at least three counts where flock sizes are recorded (separate form available at www.shorebirds.org.au). Please contact the Shorebirds 2020 team for more information if you are interested in conducting component counts at your *Shorebird Area*.

Recording data in this way helps us to understand how much variation there might be in any count due to the error inherent in counting or estimating numbers in large flocks, and also makes it possible to detect short-term changes in shorebird populations. Counts in areas where thousands of birds are spread out in groups of 10-20 birds will be far more accurate than counts done in areas where 20,000 birds are congregated together. While this kind of information can be informative at any site, *due to time constraints on entering and analysing such data we are requesting that counters only do this in areas where there are large numbers of shorebirds (over 5,000), a minimum of three times.*

It is important to record the number of each species in each component count. For example, during a count you might record a total of 1000 Red-necked Stints, but unless they were all together they should be recorded as 400 / 9 / 3 / 27 / 60 / 230 / 1 / 270. A rule of thumb for how to aggregate groups of birds that form each flock is if they appear closer than 5 metres apart they should be counted as part of the same flock. This data needs to be gathered for each *Count Area*, and then a summary sheet for each *Shorebird Area* needs to be filled out.

Shorebirds 2020 contacts

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