# A preliminary assessment of the importance of the Manning River for shorebirds and other waterbirds

Alan Stuart
81 Queens Rd, New Lambton, NSW 2305, Australia

In 2008, the author conducted monthly high tide surveys at Harrington and Mudbishops Point, the two known shorebird high-tide roost sites within the Manning River. The data obtained suggest that the Manning River is important for several migratory shorebirds, such as Red-necked Stint *Calidris ruficollis*, Pacific Golden Plover *Pluvialis fulva*, Bar-tailed Godwit *Limosa lapponica* and Double-banded Plover *Charadrius bicinctus*. High numbers of some other waterbirds were sometimes recorded, including more than 1,600 terns in November 2008 and 150-200 Little Tern *Sternula albifrons* in several other months. Beach Stone-curlews *Esacus magnirostris* were recorded on most of the surveys.

## INTRODUCTION

Birdwatchers sometimes visit locations around the two mouths of the Manning River in New South Wales to look for waterbird species, especially shorebirds. The area is well known as a source of unusual bird records. The Annual Bird Reports for the Hunter Region regularly contain records for Manning River locations, especially for Mudbishops Point (also known as Farquhar Inlet) and to a lesser extent, Harrington. There are also some pre-2008 records for Mudbishops Point in the Birds Australia (BA) Shorebirds 2020 database. These prior records will be discussed in more detail later.

For several years, I have harboured the thought that our knowledge about the importance of the Manning River for waterbirds in general and shorebirds in particular, was very limited. Most birdwatchers, myself included, have historically only visited the area in the summer months, and there are almost no winter records for Manning River in the Annual Bird Reports. Also, most visitors to the area have not been collecting data systematically i.e. the records are essentially opportunistic - these can be quite interesting in their own right but they do not convey the full picture of what the area is like.

Consequently, I decided to undertake regular monthly surveys of the Manning River for 12 months. This paper describes my findings, and I hope will encourage others to do similar assessments of other locations and/or to supplement this initial set of data for Manning River.

## Prior Records

### Hunter Region Annual Bird Reports

Over a 15 year period since 1993, 26 shorebird species have been recorded in the Manning River area (Stuart 1994-2008). Many of the records are of relatively low numbers of birds, but notably there have been several records of 100+ Bar-tailed Godwit *Limosa lapponica* and also records of 100+ Pacific Golden Plover *Pluvialis fulva*, Red-necked Stint *Calidris ruficollis* and Eastern Curlew. The Australian Pied Oystercatcher *Haematopus longirostris* counts often have exceeded 20 birds, and in recent years there are also records of >20 Sanderling *Calidris alba*, which is a rare species elsewhere in the Hunter Region.

The Manning River area also has a pair of resident Beach Stone-curlews *Esacus magnirostris*, which have been recorded every year since 1998. Mudbishops Point hosts the only confirmed Australian record for Kentish Plover *Charadrius alexandrinus*; a single bird was present over February-April 2002 (Stuart 2003) and it is possible that the bird may have been present much earlier in the 2001/2002 season.

It is well documented (Stuart 1994-2008) that there are breeding colonies of Little Tern *Sternula albifrons* at both locations and there have been several records of large numbers of Crested Tern *Thalasseus bergii* and Common Tern *Sterna hirundo*.

### Shorebirds 2020 Database

The BA Shorebirds 2020 project, which commenced in 2008, has established a national database of historical shorebird records. This source contained a small number of Manning River records which were made available by BA (Oldland 2008) and are summarised in **Table 1**, which shows the average counts for ten shorebird species recorded at Mudbishops Point. There were no other records of shorebirds for Mudbishops Point and none at all for Harrington in the Shorebirds 2020 database. An anomaly that is immediately apparent is that species such as Australian Pied Oystercatcher and Sanderling, which are known to occur regularly, do not even feature and thus it is clear that the database does not provide a comprehensive historical record. Conversely, the data in **Table 1** for Greater Sand Plover *Charadrius leschenaultii* (which is generally considered to be rare in the Hunter Region) could imply this species is present quite frequently if all records concern one or two birds.

**Table 1.** Average shorebird counts at Mudbishops Point from the Shorebirds 2020 database.

| Shorebird Species | Average No. of Birds |
|---|---|
| Pacific Golden Plover | 32.0 |
| Red-capped Plover | 28.5 |
| Double-banded Plover | 15.2 |
| Greater Sand Plover | 0.5 |
| Bar-tailed Godwit | 52.5 |
| Whimbrel | 3.3 |
| Eastern Curlew | 14.5 |
| Common Greenshank | 0.3 |
| Red-necked Stint | 87.8 |
| Curlew Sandpiper | 0.5 |

## SURVEY AREAS AND METHODOLOGY

### General Comments

My first challenge was to work out which areas to survey, with the focus being to identify where to do high-tide surveys, taking advantage of the tendency of shorebirds to roost communally at favoured locations. The Manning River has a large delta system with, sometimes, two river mouths - one at the village of Harrington north-east of Taree and the other some 10km to the south, at Mudbishops Point near the village of Old Bar. At low tides, the river delta with its many islands, seemingly offers plentiful potential habitat for foraging shorebirds, although in many places there is heavy vegetation all the way down to the high water line. At high tides, the two known roosting sites for shorebirds are at Harrington (31º 52.53'S 152 º 41.40'E) and Mudbishops Point (31º 56.95'S 152º 36.41'E).

I carefully considered if there might be any other significant roosting sites. None were apparent from inspection of cartographic and satellite maps of the area, or from visual inspections where I could obtain road access down to the river. Although an investigation by boat might reveal some additional roosting sites, their existence seems unlikely. Therefore, I decided that high-tide surveys at Harrington and Mudbishops Point, both of which are conveniently accessible by land, would allow me to monitor the total shorebird population in the Manning River area. From casual observations, these locations also hosted good numbers of other waterbird species, although such species have less tendency to congregate near roosts and presumably are scattered more widely through the area.

It was not feasible to survey both sites during the same high tide event, as the distance between Harrington and Mudbishops Point, by road, is some 40-50km and both surveys required ~ 2 hours to complete. Also, for much of the year, only one of the two daily high tides occurred during daylight hours. For these reasons, the logistics required that the surveys at the two locations be made on consecutive days. This clearly is sub-optimal, in that it creates the possibilities of either double counting or else under-counting, because of movements of birds between the two sites. However, the inadequacy can only be completely eliminated by simultaneous surveys of the two sites, which was not possible. Also, shorebirds tend to be site faithful, unless disturbed, and so I decided to proceed with my plan.

All bar one of the surveys were done during morning high tide events. One reason for this choice is that in the late afternoon, some of the roosting sites at Mudbishops Point are difficult to survey due to glare from the sun. Another factor is that later in the day the amount of human activity increases, leading to more frequent disturbance of/relocation by birds, thus making it more difficult to obtain a reliable count. For similar reasons, it was preferable to survey on weekdays rather than weekends, but this was not always possible.

### Harrington

The area surveyed at Harrington is shown in **Figure 1**. The surveys commenced 30-40 minutes before the high tide time and typically required 1.5-2 hours. The procedure was to walk along the breakwater that lies between the main arm of the river and a broad body of water that fronts the village, viewing by telescope the birds roosting and feeding on sandbanks within the river and on the opposite shoreline. The position and number of sandbanks varied somewhat. The shoreline opposite the breakwater and within the survey area is sand and sand-dunes; immediately beyond the survey area coastal forest closely abuts the shoreline which therefore would

make these areas unsuitable for shorebirds to roost at (except possibly for Whimbrels *Numenius phaeopus*).

In summer, there is a breeding colony of Little Terns within the Harrington survey area; however, birds on the ground within the colony are not visible from the breakwater. The counts of Little Tern are based on birds seen flying in the area or roosting on sandbanks in the river. Closer access to the Little Tern colony is possible from the village of Manning Point (involving a return walk of approximately 4km) but cannot be achieved within the same high tide event.

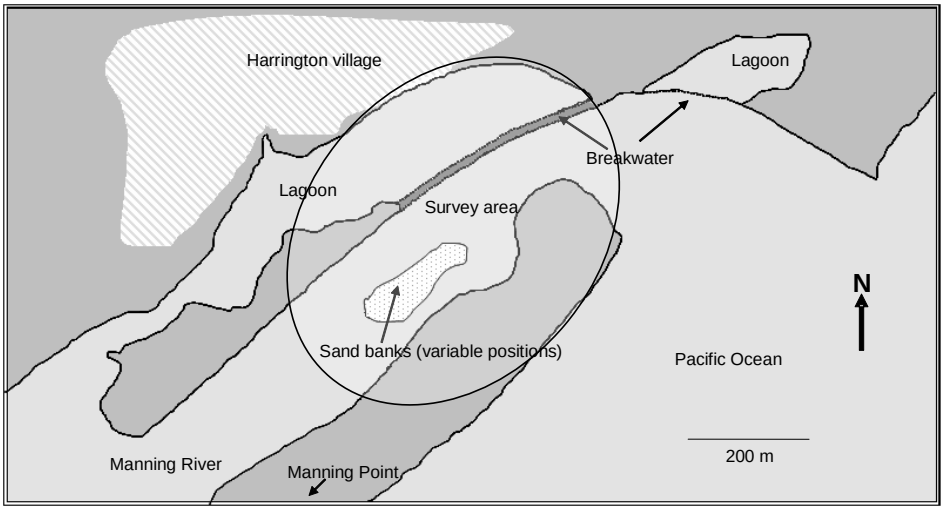


**Figure 1**. Survey area at Harrington.

## Mudbishops Point

The area surveyed at Mudbishops Point is shown in **Figure 2**. The surveys commenced ~30 minutes before the high tide time and typically required ~2 hours. The procedure was to walk in a clockwise direction around Mudbishops Point, first along the edge of the lagoon and then back along the ocean shoreline to the starting point, viewing by telescope the birds roosting and feeding on sandbanks within the river and on the shorelines. The position and number of sandbanks varied somewhat. Conducting the survey in a clockwise direction is important as it lessens the chances of double-counting of birds along the beach, because birds *tend* to flush back towards the Point.

For the first four monthly surveys, the river mouth was completely closed off by a sandbar. The sandbar was removed by dredging in late April i.e. between the dates of the April and May surveys, and the channel for the river outlet became some 20-30m wide. By November it was visibly silting up, and in the December survey it had completely closed over again.

In summer, the Mudbishops Point survey route circumnavigates a breeding colony of Little Terns and the counts include birds seen within the colony as well as birds flying or roosting on sandbanks or shorelines.

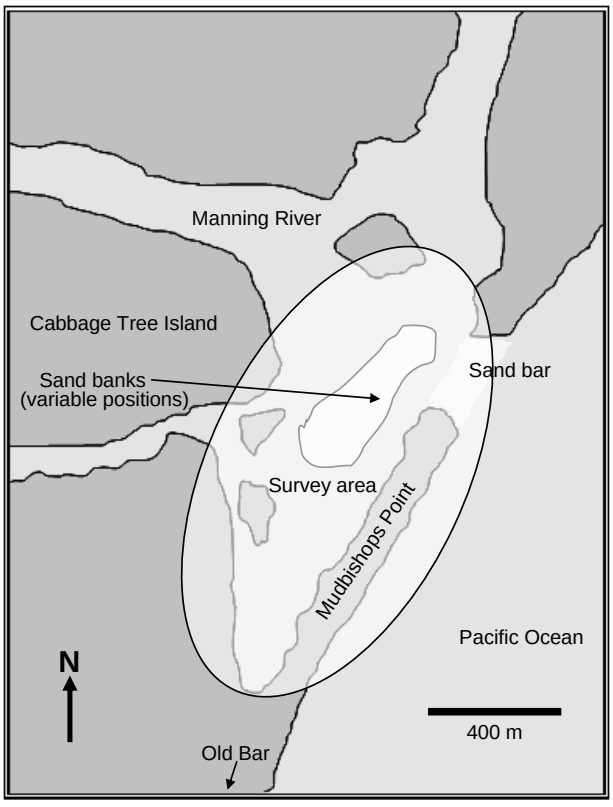


**Figure 2.** Survey area at Mudbishops Point**.**

## RESULTS

**Table 2** summarises all the data from my surveys (for space reasons, the monthly overall totals for individual species are not presented) in which 35 waterbird species were recorded, including 16 shorebird species. Some species were recorded only once: Australian Wood Duck *Chenonetta jubata*, Red-necked Avocet *Recurvirostra novaehollandiae* (3 birds flying rapidly through Harrington), Grey-tailed Tattler *Tringa brevipes* and Ruddy Turnstone *Arenaria interpres*; and four other species just twice, in low numbers: Eastern Reef Egret *Egretta sacra*, Lesser Sand Plover *Charadrius mongolus*, Sharp-tailed Sandpiper *Calidris acuminata* and Curlew Sandpiper *Calidris ferruginea* (with one notable winter record for the latter). All other species were recorded much more frequently and many of them in large numbers for the Hunter Region and in some instances significant in a wider regional context. Particularly interesting records included:

- 180 Bar-tailed Godwit in March and 100+ birds in four other months with 25-30+ birds over-wintering.
- 121 Double-banded Plover *Charadrius bicinctus* in June and >110 birds present over April-June.
- 331 Red-necked Stint in March and 179-268 birds in January and November with many winter records mostly of 50+ birds.
- 10+ Australian Pied Oystercatcher almost every month and 20+ birds in February and March.
- Peak count of 147 Pacific Golden Plover in March and many other records of 40+ birds over spring/summer.
- Peak count of 48 Eastern Curlew in March and many other records of 10-30+ birds over spring/summer.
- Peak count of 40 Sanderling in December and several other records of 18-30 birds over spring/summer.
- 20+ Red-capped Plover *Charadrius ruficapillus* regularly present and peak count of 46 birds in March.
- Large influx of both Little Tern and Common Tern in November (~1,000 birds were present) and 100-200 Little Tern present over January-March and October-December.
- 100+ Little Black Cormorant *Phalacrocorax sulcirostris* recorded over October-December, but very few birds in other months.
- 22 Caspian Tern *Hydroprogne caspia* in March and 22 White-fronted Tern *Sterna striata* in July.

## DISCUSSION

For space reasons, and because surveys over several years are needed before real trends can be discerned, I have limited the following discussion to just some of the species (including some migratory shorebirds and Threatened Species in NSW) where the data from the 12 months of surveying suggest an interesting result.

The Manning River has the southernmost resident pair of Beach Stone-curlews in NSW (Morris 2008) and I recorded birds in 8 of the 12 months, usually as a pair. However, on three occasions I found a single bird in the survey areas, and in September, a single bird at Saltwater National Park some 10-15km south of Mudbishops Point outside the regular survey areas. In May, I saw a pair close together at Harrington at dusk and the next day at Mudbishops Point a single bird (which I watched for ~10 minutes - it clearly was alone). I strongly suspect that there were three birds present in 2008, but this would only be provable from simultaneous surveys at both locations (or by banding).

The winter counts of >110 Double-banded Plover are well below 1% of the migrating population of some 30,000 birds (Delany & Scott 2006). However, the counts are notable ones for New South Wales - they compare favourably with records of 212 birds at Lake Bathurst in 2003, 126 birds at Botany Bay in 1992 and 200-300 birds some years at Comerong Island near Wollongong (Morris 2008). In the Hunter Bird Observers Club's database, the previous highest count at Mudbishops Point is of 11 birds in March 2003 (Stuart 1994-2008); thus, the 2008 assessment of the area has increased the maximum count by more than an order of magnitude. There have not been many previous winter visits by birdwatchers to the area.

Most of the Double-banded Plover were at Mudbishops Point, where they used two preferred roosts: i) amidst shingly beach/foredunes from immediately south of the river mouth extending some 100m along the ocean side of the Point; ii) on large sand banks within the lagoon. Occasionally

birds were present in low numbers at the shoreline on the lagoon side of the Point, where they were usually foraging. At Harrington, Double-banded Plover were recorded mainly at a large sand bank within the main channel.

Although many of the Red-capped Plovers and Red-necked Stints at Mudbishops Point roosted at the same locations as the Double-banded Plovers, a greater proportion of both of these species were scattered around other sections of the shoreline, particularly the Red-capped Plovers which appeared to have territorial areas all along the foredunes of the beach.

Within the Hunter Region and probably therefore within New South Wales, the count of 331 Red-necked Stints at Mudbishops Point in March 2008 is exceptionally high, only exceeded in recent years by counts of 350 birds at Ash Island in March 2005 and 400 birds in the Hunter Estuary in December 1995 (Stuart 1994-2008). Counts of more than 100 birds in the Hunter Estuary and at Port Stephens, both of which are surveyed frequently, are uncommon. Possibly, many of the birds at Mudbishops Point in March were on migration passage. However, at the time the habitat appeared to be ideal for small shorebirds - the river mouth was closed off by a sandbar and the lagoon was heavily silted, causing it to be very shallow with many sand banks, on all of which Red-necked Stints were present.

Possibly, many of the 147 Pacific Golden Plover recorded in March were on migration passage as there were only 96 birds present the previous month. However, other waterbirds (such as Black Swan *Cygnus atratus*, Australian Pied Oystercatcher, Red-necked Stint, Eastern Curlew and Caspian Tern) also had peak counts in March, so it may have been that conditions locally were very favourable around that time.

A small number of Little Terns had returned to Mudbishops Point by 19 July, but numbers remained low until October when an estimated 160 birds were present. (NB it was not always easy to get an accurate count of any of the tern species as birds tended to fly about, dispersing and regrouping frequently). In November, there was a very large influx of tern species at Mudbishops Point - around 400 Little Tern and 600 Common Tern were roosting at the time of the survey, together with 75 Crested Tern (which were present in very high numbers at Harrington that month). In December, although conditions were difficult for observing (high winds), I was only able to find 3 Common Terns, and the counts for the two other species were much lower than for November. Do these changes reflect short term favourable conditions or were many birds on migration passage in November? Presumably, it will require several more years of data before such questions can be answered.

I suspect that both Striated Herons *Butorides striata* and Eastern Reef Egrets sometimes roost on the Harrington breakwater at night, since my sightings of them mainly occurred during those surveys that started soon after dawn. The birds all flushed from rocks near to the waterline as I approached. Possibly it is a daily event for them to be flushed by an early morning walker?

Unfortunately, disturbance from human activity was a regular occurrence at all the roost sites, especially at Mudbishops Point, particularly in the warmer months. At Harrington, birds roosting on sandbanks mostly were left alone (occasionally a boat would disgorge passengers to fish or cavort on a sandbank). Birds attempting to roost on the shoreline opposite the breakwater were more liable to disturbance from 4WD traffic and boat landings. At Mudbishops Point, there was nearly always a regular procession of 4WD vehicles and walkers - sometimes with dogs, despite the signs forbidding this. Birds roosting along these shorelines were rarely able to stay in one spot for very long. Happily, there were far fewer occurrences of disturbance to birds roosting on the sandbanks at Mudbishops Point - possibly, the water near them is too shallow for boats to approach closely.

## CONCLUSIONS

All of the species recorded in the 12 months of surveys at Harrington and Mudbishops Point were present at levels well below 1% of their Australian populations. Therefore, the Manning River seems to be of lesser importance for waterbirds than either the Hunter Estuary or Port Stephens, since both those locations are known to host many species at >1% population levels. Nevertheless, several species were found to be present at Manning River in numbers that are significant for the Hunter Region.

The initial 12 month assessment has shown that the Manning River warrants ongoing surveying, and I will be endeavouring to continue to make trips there as often as I can manage. The peak counts for Red-capped Plover, Double-banded Plover, Bar-tailed Godwit, Red-necked Stint, Grey-tailed

Tattler and five species of terns (Little, Caspian, White-fronted, Common and Crested) all exceeded the previous highest recorded counts for Harrington and Mudbishops Point (Stuart 1994-2008), and it will be very interesting over time to see what is "normal" for the area.

I hope that this article will inspire others to contribute to the systematic surveys at the Manning River area using a similar methodology to mine, so that the amount of data about the locality can grow from its currently very limited state, and we can start to see answers to some of the questions that a preliminary study invariably throws up. I also hope that this article might spur others into selecting some favourite site for a systematic study.

## REFERENCES

Delaney, S. and Scott, S. (2006). 'Waterbird Population Estimates - 4th Edition'. (Wetlands International, Wageningen, The Netherlands.)

Morris, A. (2008). Personal communication.

Oldland, J. (2008). Birds Australia Shorebirds 2020 Coordinator. Personal communication.

Stuart, A. (Ed.) (1994-2008). Hunter Region of New South Wales Annual Bird Report Numbers **1-15** (1993-2007). (Hunter Bird Observers Club Inc., New Lambton.)

**Table 2.** Shorebird and other waterbird numbers at Manning River locations in 2008.

| **Month** | **Jan** | | **Feb** | | **Mar** | | **Apr** | | **May** | | **Jun** | | **Jul** | | **Aug** | | **Sep** | | **Oct** | | **Nov** | | **Dec** | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Location**** | **H** | **M** | **H** | **M** | **H** | **M** | **H** | **M** | **H** | **M** | **H** | **M** | **H** | **M** | **H** | **M** | **H** | **M** | **H** | **M** | **H** | **M** | **H** | **M** |
| Black Swan *Cygnus atratus* | 4 | 22 | | 23 | | 35 | | 11 | | 2 | | | 4 | 1 | | | | 5 | | 6 | 1 | | 9 | 26 |
| Australian Wood Duck *Chenonetta jubata* | | | | | | | 6 | | | | | | | | | | | | | | | | | |
| Little Pied Cormorant *Microcarbo melanoleucos* | 1 | | 1 | 1 | | | | 1 | 2 | | 2 | 1 | 12 | 1 | | | 1 | 1 | | | 3 | | | |
| Great Cormorant *Phalacrocorax carbo* | 1 | | 5 | 1 | | | | | 1 | | | | 1 | | | | 2 | 1 | 2 | 1 | 6 | 2 | 2 | 10 |
| Little Black Cormorant *Phalacrocorax sulcirostris* | 10 | | 1 | 2 | | | 2 | | | | | | 4 | | 3 | | 34 | | 21 | 95 | 143 | | 150 | |
| Pied Cormorant *Phalacrocorax varius* | 76 | 8 | 28 | 13 | | 10 | | | 1 | | 1 | 1 | 6 | | 2 | 1 | 17 | 10 | 18 | 7 | 46 | 7 | 12 | 19 |
| Australian Pelican *Pelecanus conspicillatus* | 32 | | 40 | | 32 | 10 | 49 | 2 | 18 | 9 | 38 | 2 | 31 | 3 | 17 | 1 | 23 | 1 | 27 | 1 | 22 | 11 | 51 | 10 |
| Striated Heron *Butorides striata* | | | | | | | 3 | | | | | | 3 | | | | | | | | | | 1 | |
| White-faced Heron *Egretta novaehollandiae* | 2 | | | 1 | 6 | 4 | 1 | 1 | 1 | 1 | | 1 | 2 | 3 | | | 1 | 1 | | 1 | 1 | | | |
| Eastern Reef Egret *Egretta sacra* | | | 1 | | | | 1 | | | | | | | | | | | | | | | | | |
| Beach Stone-curlew *Esacus magnirostris* | | | | 2 | | 2 | | 2 | 2 | 1 | | | | 1 | 2 | | | | | | | 1 | | 2 |
| Aust. Pied Oystercatcher *Haematopus longirostris* | 12 | 3 | 17 | 3 | 14 | 8 | 11 | 6 | 9 | 2 | 9 | 4 | 7 | 4 | 4 | 8 | 6 | 2 | 8 | 6 | 4 | 7 | 4 | 9 |
| Red-necked Avocet *Recurvirostra novaehollandiae* | | | | | | | | | 3 | | | | | | | | | | | | | | | |
| Pacific Golden Plover *Pluvialis fulva* | | 1 | 42 | 54 | 53 | 94 | | | | | | | | | | | 24 | 17 | 10 | 43 | 21 | 8 | 40* | |
| Red-capped Plover *Charadrius ruficapillus* | 4 | 18 | | 44 | | 46 | | 42 | | 30 | 1 | 9 | 7 | 23 | 2 | 19 | 15 | 18 | 4 | 20 | | 35 | 6 | 30 |
| Double-banded Plover *Charadrius bicinctus* | | | | | | 55 | | 111 | 2 | 113 | 48 | 73 | 26 | 61 | | 73 | 1* | | | | | | | |
| Lesser Sand Plover *Charadrius mongolus* | | | | 1 | | | | | | | | | | | | | | | | | | | | 2 |
| Masked Lapwing *Vanellus miles* | 2 | | 2 | | 6 | 10 | 9 | 4 | 4 | | 2 | | 2 | 4 | | | 6 | | 10 | 3 | | 2 | 1 | 2 |
| Bar-tailed Godwit *Limosa lapponica* | 53 | 5 | 47 | 54 | 124 | 56 | 39 | | 18 | 14 | 14 | 11 | 11 | 20 | 3 | 46 | 13 | 26 | 19 | 130 | 24 | 109 | 42 | 129 |
| Whimbrel *Numenius phaeopus* | | | | 1 | 2 | | | 1 | | | | | | | | | 4 | 2 | | 2 | | 3 | | 2 |
| Eastern Curlew *Numenius madagascariensis* | 10 | 2 | 11 | 11 | 43 | 5 | | 2 | | 1 | 2 | | 1 | | 5 | 5 | 9 | 4 | 6 | 11 | 12 | 12 | 11 | 21 |
| Grey-tailed Tattler *Tringa brevipes* | | | | | | | | | | | | | | | | | | | | | | 8 | | |
| Ruddy Turnstone *Arenaria interpres* | | 1 | | | | | | | | | | | | | | | | | | | | | | |
| Sanderling *Calidris alba* | | 18 | | | | 24 | | | | | | | | | | | 3* | | | 18 | | 30 | | 40 |
| Red-necked Stint *Calidris ruficollis* | | 179 | | 80 | | 331 | | 57 | | 3 | | 18 | | 55 | | 51 | 22 | 34 | 2 | 30 | 1 | 267 | | 94 |
| Sharp-tailed Sandpiper *Calidris acuminata* | | | | | | | | | | | | | | | | | 1 | 1 | | | | | | |
| Curlew Sandpiper *Calidris ferruginea* | | | | | | | | | | | | 1 | | | | | 1 | | | | | | | |
| Little Tern *Sternula albifrons* | 18 | 189 | 130 | 20 | 120 | 25 | | 26 | | | | | | 5 | | 10 | | 11 | | 160 | 21 | 400 | 80 | 50 |
| Gull-billed Tern *Gelochelidon nilotica* | | | | | | | | | | | | 1 | 1 | 5 | | | | | | | | 1 | | |
| Caspian Tern *Hydroprogne caspia* | | | | 12 | 1 | 21 | | 1 | 3 | | | | 2 | 1 | 1 | 2 | 1 | 3 | 1 | | | 2 | | |
| White-fronted Tern *Sterna striata* | | | | | | | | | 2 | | | | | 22 | | 11 | | 4 | | | | | | |
| Common Tern *Sterna hirundo* | | 343 | 8 | 167 | 47 | 140 | | 2 | | | | | | | | | | 1 | 2 | 2 | | 600 | | 3 |
| Crested Tern *Thalasseus bergii* | 48 | | 74 | 4 | 109 | 6 | 78 | 63 | 73 | 16 | 5 | 12 | 113 | 85 | 17 | 20 | 114 | 82 | 122 | 13 | 563 | 75 | 226 | 23 |
| Silver Gull *Larus novaehollandiae* | 42 | 20 | 27 | 82 | 127 | 21 | 52 | 5 | 258 | 18 | 47 | 42 | 17 | 14 | 33 | 2 | 34 | 10 | 56 | 3 | 42 | 59 | 160 | 198 |

**H = Harrington, M = Mudbishops Point *Records from within the survey area but outside the main survey time