

Beach Stone-curlew at Soldiers Point, Port Stephens: breeding records and behavioural observations

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A pair of Beach Stone-curlew *Esacus magnirostris* has bred regularly on Dowardee Island in Port Stephens, New South Wales since 2011. I provide details and describe various behavioural and plumage-related observations, made in studies of the adult birds and their chicks.

INTRODUCTION

Since May 2011 a pair of Beach Stone-curlew *Esacus magnirostris* have been resident in Port Stephens. The pair's activity has been centred around Soldiers Point. Soldiers Point is geographically central within the Port Stephens estuary with tidal flats for feeding and nearby undisturbed islands for refuge. During six of the seven summers following their arrival the birds have successfully raised a single chick that has appeared to reach adulthood. The breeding activity has occurred on Dowardee Island to the west of Soldiers Point.

I first saw two birds that I did not recognise, on 20 May 2011 late in the afternoon on the western side of Soldiers Point opposite Dowardee Island. A beachside resident commented to me "they have been around for a couple of days". So this would be very close to their actual arrival date. I photographed them a short while later and established their identity as Beach Stone-curlew. This was the beginning of seven years thus far of observation of these birds during which time they have successfully raised six young. The bird's status as Critically Endangered under the *Biodiversity Conservation Act 2016* (NSW) has seen them feature on local and national television as their presence focused a major conservation effort to protect their habitat.

Marchant & Higgins (1993) is an excellent source of background information on this species, then known as the Beach Thick-knee, although the distribution information for NSW is out of date. In 1993 the range was limited to northern Australia including northern parts of New South Wales. Queensland continues to be a stronghold (Freeman

2003) but the range has expanded southwards (Rohweder 2003; Roderick & Stuart 2016; Mo 2016). The breeding range also has extended southwards (Clancy & Christiansen 1980; Hole *et al.* 2001).

The first confirmed record for the Hunter Region was of a single bird at Manning Point in 1993 (Stuart 1994), with the first confirmed breeding for the Region in 1998 at Harrington (Hole *et al.* 2003). Hunter Bird Observers Club (HBOC) records show that breeding or breeding attempts have continued annually in the Manning River estuary to this date (Stuart 1999-2018). Although records from the Hunter Estuary remain infrequent (single birds present in December 2002 and October-November 2015) there have been many records from around Port Stephens after a single bird was first recorded (on Corrie Island) in February 2006 (Stuart 2007). Since I first saw a pair of Beach Stone-curlew at Soldiers Point in 2011, I and others have recorded them many times in the Soldiers Point area or on Dowardee Island which is situated *c.* 350 m offshore from Soldiers Point. Mo (2016) reported that the pair bred in the area, citing in evidence some articles by me which had appeared in HBOC newsletters. In this article, I present details in relation to breeding by the Soldiers Point / Dowardee Island pair, and I describe some aspects of their behaviour which I have observed during seven years of study.

METHODS

Study Area

Soldiers Point (32.70°S 152.06°E) extends northward from the southern shoreline of the Port Stephens estuary. Soldiers Point is extensively developed with

residential, commercial and community facilities. Its shoreline habitat includes sand and mudflats that support populations of invertebrates including Soldier Crab *Mictyris longicarpus*. Dowardee Island (32.70°S, 152.06°E) is situated approximately 350 m offshore to the west off Soldiers Point. Referred to as Oakey Island by some local Aboriginal people, the island is now controlled by the Worimi Land Council. The island had a long history associated with the oyster industry and is littered with debris from that era. Its shoreline is a mixture of mangroves (mostly Grey Mangrove *Avicennia marina*), some small sand beaches and rock. Sunset Beach, which I will refer to subsequently, is the beach on the western side of Soldiers Point extending from the Soldiers Point Marina to the southern end of Pearson Park.

Observations

Since 2004 I have been fortunate to reside close to the shoreline of Soldiers Point. I have had the free time and interest to enjoy countless hours of casual observation of the natural life of Soldiers Point. I have also kayaked extensively around the study area. Much of my bird observations have been associated with a strong interest in photography. I trained in the navy as a photographer and have taken many photographs to record the Beach Stone-curlew's presence and behaviour during its time here. When attempting to establish the birds breeding on Dowardee Island I have made visual observations aided by binoculars while on the island and also from my kayak. I have always tried to minimize my impact on

the pair, especially when the pair is on Dowardee Island.

RESULTS

Birds' Range within Port Stephens

I will concentrate my comments to the area around Soldiers Point; however, the Beach Stone-curlew has been observed over a wide area of the Port Stephens estuary. Sightings have been made by members of HBOC individually and also during the twice-yearly shorebird survey conducted with the support of NSW Office of Environment and Heritage. The Beach Stone-curlew pair can be observed around Soldiers Point and the wider estuary for much of the year, but from late spring for several months they are not sighted on the 'mainland'.

Breeding

On six of the seven summers since their arrival, the Beach Stone-curlew pair has successfully produced a chick able to make the flight from Dowardee Island to Soldiers Point, feed independently and grow toward maturity. I have photographed adults with a chick in most breeding seasons. **Figure 1** is a collage of such photos taken over this period.



Figure 1 Parents and juvenile Beach Stone-curlew in four breeding seasons. The juvenile is on the right in the 2012, 2014 and 2015 frames which were all taken on Sunset Beach. In the 2018 frame, taken on Dowardee Island, the juvenile is at the rear.

Plumage transition

Clancy (1986) described some of the plumage changes observed when a juvenile bird at Red Rock transitioned to adult plumage. His work is thorough and follows a chick from newly hatched to flying and I would commend this article to the reader wanting to know more. He notes that, “by week 7 the juvenile more closely resembles an adult” and further notes the bird cannot fly at this stage (Clancy 1986).

My observations at Soldiers Point were of birds capable of sufficiently strong flight to have made the journey there. I did not see the juvenile that I photographed on Dowardee Island in 2018 fly; however it looked similar in size and appearance to other juveniles I had seen in February of prior years. There is a gap in the literature regarding the timeframe towards adult plumage. A composite image showing the 2014–15 chick (**Figure 2**) reveals some information. Some areas to note as the bird ages are: more marked definition between the yellow and dark areas of the bill; decreasing size of the white patch on the side of head; decreasing amount of light brown colour and flecking in the feathering; changing presence and definition in the white ‘shoulder’ wing markings.



Figure 2. Three views, taken at 4-5 week intervals in 2015, showing changes to the 2014–15 chick’s plumage.

The illustration of a juvenile Beach Stone-curlew in Marchant & Higgins (1993, Plate 55) shows two distinct white areas on the bird’s head – a supercilium and a large white auricular spot, whereas in the illustrations of the adults the two areas of white are joined. The accompanying text noted that only one Australian individual juvenile had been available and that juveniles from the Philippines did not have that characteristic. **Figure 2** clearly shows the 2014–15 Port Stephens juvenile to have a single large area of white. Inspection of available close-up head images of

juveniles from the 2011–12, 2013–14, 2015–16 and 2017–18 breeding seasons revealed similar head patterns to the 2014–15 juvenile (**Figure 3**). This suggests that the juvenile illustrated in Marchant & Higgins (1993) may have been aberrant. However, for the 2015–16 and 2017–18 chicks there was narrowing of the white area and the odd darker feather was present.



Figure 3. Head shots from juvenile Beach Stone-curlews from four breeding seasons, showing the varying extent of the white patches on the birds’ heads.

Behavioural Observations

I strongly commend Marchant & Higgins (1993) to anyone who wants to garner information on this species. In this section I will occasionally quote from that reference and compare that to some of my local observations.

Feeding

The Beach Stone-curlew in Port Stephens feed predominantly on Soldier Crabs on the exposed tidal flats. I have seen them hunting for other crab species amongst rocks on occasion. The name ‘magnirostris’ means ‘big beak’ in Latin (Marchant & Higgins 1993). The beak, although big in profile, is a relatively narrow wedge when viewed from above. The feeding style varies from simply grabbing Soldier Crabs when they are above the sand, to plunging their beak deep in the sand to catch their prey. Individual birds quickly eat up to six Soldier Crabs and then rest or roost. On the southern end of Sunset Beach, a storm-water drain pipe usually has at least a trickle of fresh water coming from it. If the Beach Stone-curlew pair is on Sunset Beach they usually end up near the drain pipe where I have regularly seen them drink, and if enough water is present they bathe. I believe the birds feed at night; however when I have attempted to observe them they have taken flight even when I used a red light source to view them.

Roosting

Under this heading Marchant & Higgins (1993) record that during one period of study, one group

of 3 birds “sat, squatted or stood for 67% of the time and that the birds spend 58% of their time in the sun”. My local observations support this. When Soldier Crabs are walking about in large numbers these birds can grab their food very quickly and so have plenty of time to rest. Anyone wishing to view Port Stephens Beach Stone-curlew would be advised to look for locations sheltered from the wind and preferably where there is sunshine. I have observed them squatting in warm dry sand high up on beaches and sheltering from the wind near eroded embankments. They appear to value warmth which probably would help them conserve their energy resources.

Mobility

Although not mentioned in Marchant & Higgins (1993) the Beach Stone-curlew can walk at a very brisk pace and appear to do so easily. I have to walk quickly to keep pace with them. The pair’s ‘standard’ day on Sunset Beach is to fly straight across from Dowardee Island by the shortest route to the beach, then feed and rest alternately during the course of the low tide. During this time they usually walk approximately 450 m south to finish up near the before-mentioned drain. They do not take flight during this transit unless significantly threatened, seemingly preferring to walk.

Response to human activity

Marchant & Higgins (1993) states the birds are “shy in areas where often disturbed” and thereafter “often remarkably confiding and inquisitive in remote areas”. The local pair would have regular exposure to humans in much of the Port Stephens estuary, and particularly so around Soldiers Point. It is not known what exposure to human activity the local birds had prior to their arrival. Two observations merit specific mention. On one occasion when I went to pump for fishing bait (Pink Nippers *Trypaea australiensis*) there were no birds in the area. On my first action with the bait pump (where sand and possibly crustacean are ejected) a single Beach Stone-curlew landed about 5 m from me. On another occasion I observed a Beach Stone-curlew standing unperturbed whilst a family played with a soccer ball nearby.

Some social observations

- I was observing a single bird on Sunset Beach. The bird looked toward Dowardee Island and called a few times fairly quietly (to my ears at least). After a short interval another bird flew across from the island and joined it. If the second bird had responded to the call it apparently had done so from at least 450 m away.

- Recognising some threats is a learned skill. I observed a pair of adult birds with a grown but immature chick, stare upward at a White-bellied Sea-Eagle *Haliaeetus leucogaster* soaring well overhead, while the immature bird showed no interest in the potential threat.
- Immature birds are easily identified by behaviour as well as plumage. They can often have a stooped submissive posture (as shown by the February 2015 chick in **Figure 1**) when near parent birds. Parent birds will run at the chick and strike with their beaks to ‘check’ the chick’s behaviour.
- There seems to be a period after fledging where the parents drive the young, maturing chick away. Later (after a period of possibly some months) the nearly adult-looking bird seems to be accepted and tolerated.
- Head bobbing was noted to be an indication of nervousness /agitation /alarm (Marchant & Higgins 1993). I have observed this behaviour locally also.

DISCUSSION

Breeding

As stated previously the Beach Stone-curlew pair has successfully reared a chick until it was able to make the flight from Dowardee Island to Soldiers Point and feed independently, on six of the seven summers since their arrival. The Beach Stone-curlew pair can be observed around Soldiers Point and the wider estuary for much of the year, but from late spring they are not sighted on the ‘mainland’.

The first summer that the pair vanished from mainland Port Stephens I did not pay particular attention. The local yacht club has most of its fleet moored in between Dowardee Island and Sunset Beach. Their newsletter covering that first summer spoke in glowing terms of members witnessing the rearing of a Beach Stone-curlew chick on the beach on the eastern side of Dowardee Island. I was delighted when the pair returned to Soldiers Point with a young bird in early February, and this has been their pattern ever since. They appeared to be unsuccessful over the 2016–17 summer.

Since that first breeding year I have made several careful visits to Dowardee Island with the permission of the Worimi Land Council. I have also observed them from my kayak. The Beach Stone-curlew pair was always present, usually near the southwest corner of the island. The birds were

head-bobbing when I first sighted them from a distance of about 80 m. When not in breeding mode they would tolerate a much closer approach whilst feeding or roosting.

The island, as previously stated, has much debris and relics from the heyday of the oyster industry and much plant undergrowth that provide ideal cover for nesting and also shelter for a young chick. It is not ideal territory to move about in or to spot a nest or a very young chick. Additionally my first priority has been to minimize disturbance to the birds. As such, to this date I have not seen a confirmed nest or chick below fully-fledged development. During some visits, I have noted the parent birds flying off and circling back quickly around the beach on the eastern side. This is a behaviour reported as being associated with breeding (Marchant & Higgins 1993).

On 21 February 2018, as no new chick or the adult pair had returned to the mainland, I kayaked over to Dowardee Island with camera gear. I had only just dragged my kayak up on the southeast corner beach when a single adult Beach Stone-curlew emerged from cover and postured differently to any way I had witnessed previously. Shortly after this the second adult and a fledged chick with immature plumage emerged from the same cover.

I have no doubt from the reports of the Yacht Club members in the first year, and from my observations since, that the resident pair of Beach Stone-curlew has bred on Dowardee Island each year. The pair's presence and breeding success on Dowardee Island was a very significant factor in seeing an attempt by a nearby marina to extend closer to the island blocked by the Land and Environment Court.

In October 2017, there was a breeding attempt by Beach Stone-curlew on the northern side of Port Stephens (Fraser & Stuart 2018). A nest with a single egg was located on a sand dune on the southwest end of Corrie Island (32.68°S, 152.13°E). This probably represents another pair attempting to breed at Port Stephens, since the Dowardee Island pair bred again in 2017–2018.

CONCLUSION

It is early summer as I complete this short article. It has been two months since I sighted a lone Beach Stone-curlew on Soldiers Point. Those with the interests of these birds at heart can only hope

that there is more successful breeding of this species in Port Stephens this summer.

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Note added in proof: On 31 January 2019, I saw the Beach Stone-curlew pair and a submissive young bird fly from Dowardee Island and land on Sunset Beach. Thus it appears that the pair has bred again on Dowardee Island in the 2018–19 season.