

NESTING OF THE KELP GULL AND OTHER NEW BREEDING RECORDS FROM OUTER HARBOUR

D. J. VINCENT

The following notes record interesting new breeding observations made by the author and various companions at Outer Harbour, ca 20 km NW of Adelaide, principally in 1986-87. The observations were made in an area of habitat constructed by the Department of Marine and Harbours (DMH). It consists of the stone Northern Revetment Mound (breakwater), ca 1300m long, and further north, a sand-clay island of about 900m length and 150m width at high tide. The revetment mound consists of large (three to five tonnes) irregular, tumbled rocks. The island, although useful for protecting the Container Wharf, was a byproduct of the deepening of the swinging basin for ships using the Container Wharf.

AUSTRALIAN PELICAN *Pelecanus conspicillatus*

On 29 December 1986, D. J. and P. W. Vincent saw in the distance an extremely small, juvenile pelican swimming with two adults and two large juveniles off the western shore of the sand clay island. D.J.V. returned on 31 December with J. Vincent and R. F. Brown to look for evidence of pelicans having bred in this area. No direct evidence was found although R.F.B. found an addled pelican egg, which he subsequently lodged with the South Australian Museum (reg. no. B44921). On this visit, twenty-one juveniles were seen swimming together and eleven adults were recorded nearby. Breeding has been confirmed through information provided by D. Sleath (pers. comm.) who visited the island on 12 October 1986. He reported seeing 18 nests with two to three eggs in each and about 20 pelicans at one end of the rookery and a group of approximately the same size 100m away.

On 17 September 1987, eight adults and eight young birds were recorded by R. F. Fewsdale and R.F.B. in a small colony on the north-eastern end of the sand-clay island. The young birds ranged from two old enough to walk towards the water (presumably to swim away if they had been

further disturbed), down to nestlings only a day or two old. A larger colony about 200m south-west in the centre of the island was occupied by 80+ adults standing amongst young pelicans also in various stages of development. On 2 October, 50 adults and 40 young were observed in the larger colony by D.J.V., J. B. Cox and R.F.B. The young birds ranged in size from chicks to three-quarter grown. On the north-eastern end of the island there were 11 young birds and 26 adults, so making 76 adults and 51 young. On 6 November 1987 D.J.V., J.B.C. and A. Lees counted 53 young birds, 41 in the colony in the centre of the island, and 12 larger birds on the sea to the north-west.

Finally, on 26 December at 1300 D.J.V. and J.V. observed only two occupied nests in the colony in the centre of the island. Each held a newly-hatched chick, and one nest also contained an egg. The maximum Adelaide temperature this day was 35° C, and an adult was standing over each nest, shielding it from the sun with partly-opened wings. Offshore, 32 adults and 60 immatures were swimming on the sea.

This is a significant new breeding site for Australian Pelicans in South Australia. In this State, breeding has only been recorded from islands in the Coorong and Lake Alexandrina, a few islands off Eyre Peninsula and Kangaroo Island and some far northern localities (SAOAN 1973, Parker *et al.* 1979).

BLACK-FACED SHAG *Leucocarbo fuscescens*

D. J. and J. Vincent and B. Burton visited the breakwater on 17 April 1987 and noted 2000+ Black-faced Shag nests in use on the central two thirds of it. Some birds were sitting on nests, mostly 10 cm high, while others were still gathering seaweed from the Port River. The south-western 250m of the breakwater was not used for nesting, perhaps because it is lower than the central part and subject to rougher weather.

On 17 September 1987, R. F. Fewsdale and R. F. Brown saw 500+ Black-faced Shags with

eggs and nestlings on the Revetment Mound and swimming and flying juveniles.

The Northern Revetment Mound was completed in 1906 but in 1962 two metres of material were added to its height. It is likely that this allowed safer, drier nesting for the Black-faced Shag. Waterman (1968) reported them nesting on this Revetment Mound in May 1967 and said cormorants, previously thought to be Pied Cormorants *Phalacrocorax varius*, had been breeding at Outer Harbour for some years. However, an employee of the DMH (pers. comm.) remarked that he had not seen any great numbers of cormorants on the Revetment Mound until after 1962 when its height was raised.

PIED OYSTERCATCHER *Haematopus longirostris*

On 6 November 1987 J. B. Cox noted a sitting bird about 300m along a sand spit extending from the north-eastern end of the island. The nest contained one egg.

SILVER GULL *Larus novaehollandiae*

Silver Gulls nested on the Revetment Mound at Outer Harbour at least as early as 1955 (Cleland 1956).

In 1970 ca 400 Silver Gulls nested on the north-eastern end while the Black-faced Shag used the central portion. This sub-optimal habitat was deserted by the opportunistic Silver Gulls after ideal conditions occurred on the sand-clay island.

The Silver Gull was also the first species to use the sand-clay island for nesting. In December 1979, less than four years after the island's completion, D.J.V. saw ca 20,000 Silver Gulls nesting here and D.J.V., J. Winslet and R.F.B. saw a similar number in November 1984. On 17 April 1987, only one nest was found although 10,000+ gulls were seen. On 2 October 1987, D.J.V., J.B.C. and R.F.B. estimated that this colony contained 50,000-100,000 birds. The colony occupied all of the vegetated parts of the island except where pelicans were nesting or roosting. On 26 December 1987 D.J. and J.V. did not specifically search for gulls' nests but observed that breeding activities had largely ceased. Very few gulls were present and only three flew at them aggressively as though nests were nearby.

KELP GULL *Larus dominicanus*

The Kelp Gull was first recorded and photographed in South Australia by M. R. Daley at Outer Harbour in March 1968 (Glover 1969).

On 29 December 1986, D. J. and P. W. Vincent observed two Kelp Gulls on the southern end of the sand-clay island, adjacent to the Northern Revetment Mound at Outer Harbour.

The Kelp Gull's nest was found on a small southern headland of this island protected from the prevailing south-westerly winds by a Nitre Bush *Nitraria schoberi*. The nest contained five eggs of two colour combinations: three were dark fawn with large brownish blotches and two were greyish-green with small, dark speckles. They may thus have been laid by two females, specially in view of the unusually large clutch. The nest was on the ground and made predominantly of dried grass and plant stalks, with a single piece of seaweed. This is the first South Australian record of Kelp Gulls attempting to breed.

R. F. Brown and R. F. Fewsdale noted on 15 January 1987 (pers. comm.) that predators, possibly avian, had destroyed the eggs of the Kelp Gull(s). Silver Gulls, Arctic Jaegers *Stercorarius parasiticus* and Little Ravens *Corvus mellori* all frequent the island. The eggshell fragments were taken to the South Australian Museum (reg. no. B44922). R.F.B. (pers. comm.) believes "that *Corvus* were the predators because one egg was sufficiently intact to display a roughly circular hole in its side typical of those made in large eggs by *Corvus*." According to Mr G. B. Ragless (pers. comm.), gulls preying on eggs always do so while the eggs are in the nest, and the removal of eggs (in this case two eggs were scattered about 25m from the nest) indicates corvid predation. The presence of five eggs indicates to him, incidentally, that two females were laying in the same nest. Nevertheless R.F.B. (pers comm.) further observed that one of the Kelp Gulls was noticeably bigger than the other, more restless and more aggressive in its behaviour towards Silver Gulls and this suggested to him that it was a male.

On 17 September 1987, two Kelp Gulls were observed in this locality by R. F. Fewsdale and R. F. Brown. This part of the island was partly eroded on 16 October 1987 by waves smashing on to the low south-western cliffs. On 6 November 1987 D.J.V., J.B.C. and A. Lees noted two Kelp Gulls and a nest with one egg, again in the same area as the 1986-87 nest. On 26 December 1987 D.J.V. and J.V. noted that the cliffs had eroded to the edge of the former nesting area. They saw no nest and no Kelp Gulls.

CASPIAN TERN *Hydroprogne caspia*

On the visit of 31 December 1986, Caspian Terns flew at intruders, so exposing their (the birds') blood-red membranes of their mouths in a threat display, which probably indicated breeding activity. Forty Caspian Terns with downy young were later seen in the nesting area (consisting mainly of Grey Saltbush *Atriplex cinerea* and Nitre Bush) at the north-eastern end of the island.

On 2 October 1987, D.J.V., J.B.C. and R.F.B. found 11 birds nesting on the seaward, western side of a sand spit which extends from the north-eastern end of the island. Nine nests had one egg and two nests contained two eggs on the bare sand ridge, some 100m from the nearest vegetation. On 6 November 1987, D.J.V., J.B.C. and A. Lees noted 55 nests with chicks and eggs here. A few large runners indicated that some nests survived the rough conditions observed on 16 October.

CRESTED TERN *Sterna bergii*

On 31 December 1986 adjacent to the Caspian Terns, 400 Crested Terns were found, also with downy young. On 6 November 1987, four nests each with one egg, were found on the lightly vegetated western edge of the island. On 26 December 1987 32 adults and 20 downy runners were present.

These and the above records of Caspian Terns represent new nesting records for terns in eastern Gulf St Vincent. Both species nest regularly on Troubridge Island in the southern Gulf and Caspian Terns at Price Saltfields in western Gulf St Vincent (J.B.C. pers. comm.). J. B. Cox and D. J. and P. W. Vincent recorded five thousand Crested Terns and six pairs of Caspian Terns nesting on Troubridge Island in February 1978 (unpubl. obs.).

DISCUSSION

The preferred nesting sites of the gulls and terns in this area are sandy spits and islands and the nesting habitat is further enhanced by

colonizing vegetation and planted vegetation. Captain F. Edwards of the DMH decided that the island should be stabilized by planting. Sea Rocket *Cakile maritima*, Nitre Bush and Grey Saltbush form a dense, if patchy, cover while weeds and some small African Boxthorn *Lycium ferocissimum* are present. There are no foxes or rabbits.

As the Boxthorn, Nitre Bush and Grey Saltbush on the island thicken and grow taller, one might expect the Pied Cormorant *Phalacrocorax varius* to nest there as it now does on Troubridge Island in similar habitat (Close 1982).

The man-made sand island and Revetment Mound, now separated by 160 m due to tidal erosion, have produced significant new nesting records for Gulf St Vincent at Outer Harbour. One hopes that erosion, which has also caused steep *ca* 2.5 m cliffs on the seaward side of the island, and human interference will not threaten this important breeding site.

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3 Buchan Avenue, Beaumont, S.A. 5066

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