



SHOREBIRD RECOVERY NEWSLETTER south coast



Sharing the shoreline

2018/19 Season



This Season in Shorebirds

The South Coast Shorebird Recovery Program continues to monitor and protect endangered shorebirds nesting on our beaches, train and support volunteers along the south coast and obtain funding to undertake comprehensive fox control and community education initiatives. The program has been running now for 20 years and is an important and rewarding part of life on the south coast for many of us!

This season the **amazing 65 volunteers** monitored a total of 166 endangered shorebird nests between Wollongong and Batemans Bay and recorded 3807 volunteer hours. Their passion and dedication to shorebird recovery keeps the program running and has immeasurable effects through their links into the local community. These birds nest right on our beaches so raising awareness and improving knowledge in the local community are extremely important for the shorebirds survival. We can ensure this.

Despite all of these amazing efforts, critically endangered **Hooded Plover** numbers continue to decline overall with only 34 adults sighted this season, however breeding pair numbers did increase back up to fourteen. The spring weather was unsettled again with cold snaps, wind and rain resulting in numerous nest abandonments and chick losses to exposure. However once the weather did stabilise we had a good summer, with nine fledglings!

The endangered **Little Terns** had a good season overall. The main colony at Lake Conjola fledged 47 chicks from 30 breeding pairs, a mass renesting after losing almost everything to the flooding lake. Another two fledglings from two tern pairs at Shoalhaven Heads. Small colonies

at Lake Wollumboola and Point Northeast failed due to fox and avian predators, winds and inundation. But overall 49 fledglings from 44 breeding pairs is a good result!

More pairs of endangered **Pied Oystercatcher** were monitored on the south coast than ever before, with five new nesting sites. Thirty two breeding pairs this season, but still only fledged 17 chicks, the same as last season. Perhaps these new pairs are just young, breeding success will hopefully improve as they become better parents. The increase in breeding pairs on the south coast is a good sign!

Thanks to Saving our Species, Crown Lands and the National Parks and Wildlife Service our **comprehensive fox control program** was maintained in 2018/19 to reduce predation of shorebird eggs and chicks. Plus Saving our Species and Holiday Havens funded yet another great summer of **endangered shorebird education programs**.

The ongoing support for our local shorebird recovery program is integral to it's success and very much appreciated! Thank-you all :)



Almost fledged endangered Pied Oystercatcher chick. Photo: Chris Grounds

Hooded Plovers



Hooded Plover numbers in NSW continue on a slight downward trend this season, with continued high losses of breeding adults. However fledgling success was quite good in 2018/19, which will offset the significant adult losses.

This season we completely lost two breeding pairs—Inyadda's usual E1/L7 changed to K9/D3 and Terneil's M2/E2 were replaced by an unbanded pair mid season. Four pairs lost one partner, and replaced them with another bird to continue nesting. Thankfully due to significant population increase over the last decade, there were single birds available to fill the gaps, however our supply is depleted due to very low fledgling numbers in four out of the last six seasons. When the south coast population peaked at 40 birds a few years ago, we had numerous unpaired adults hanging around waiting to fill any vacant spots.

This season we were back up to 14 breeding pairs despite these ongoing losses (only 11 BP in 2017/18). This was mainly due to actually recording nests for two pairs on Bherwerre Beach, and Narrawallee Spit's M0 finding a new breeding partner. Overall 34 adults (37 2017/18; 41 2016/17) were sighted over the 2018/19 season, but a few were lost partway through the season and not sighted again (M2, E2, E8). It is getting harder to accurately assess population size due to the increasing proportion of unbanded adults. The program currently does not have the resources to continue banding.

Most pairs started nesting in September, however due to unsettled weather and unseasonable cold snaps, some nests were abandoned or young chicks were lost to exposure. The weather did not become particularly stable and warm until November. Peak nesting continued through December and January, and the last chicks fledged in February. The details of each nesting attempt are summarised below.

Disappointingly no Hooded Plovers were sighted at our northward range expansion site, **Hammerhead** on Warrain Beach between Culburra and Currarong. In 2015/16 and 2016/17, D3 and L7 nested at Hammerhead. However in 2017/18 only D3 was sighted, with L7 presumed lost. At the start of this season, D3 was sighted on Bherwerre Beach, then paired up with K9 much further south at Inyadda Beach near Bendalong! So our Hoodie range has contracted back to the southern side of Jervis Bay.

At **Caves Beach** (Booderee National Park – Parks Australia) our northernmost pair of Hooded Plovers (C7/E6) nested in the foredune between spinifex runners in early September, laying their 3 eggs over 6 days. After completion of the clutch and a week of incubation, the nest disappeared. A month later another 3 egg nest was finally found, and to the surprise of the volunteers it hatched within a week! The sneaky pair must have been well hidden and incubating for 3 weeks undetected. The chicks were doing well, until one was lost at 2 weeks old, then at 3 weeks it was thought that the remaining 2 chicks were lost as well. But they reappeared and both chicks fledged amidst washed up whale bones! It looks like this Hoodie pair have really learnt the art of distraction.

A month after their chicks fledged, the pair relocated to Mary's Bay where they laid another 2 eggs in late December, however the nest was gone within a few weeks. They returned to Caves and had one last nesting attempt of 2 eggs in late January. A month later one chick hatched, but the second egg was eventually abandoned and lost. The chick survived to 3 weeks old but then disappeared.

On **Bherwerre Beach** (Booderee National Park – Parks Australia) two Hoodie pairs were recorded nesting this season. This long remote beach is also known as 'five mile'. K1 and N5 had 2 eggs on the 24th of October that were recorded by volunteers. The following day, Booderee staff reported the nest now had 3 eggs. When volunteers walked in to monitor the nest a week later, the eggs were gone. Recent rain meant any sign of the nest or fate were washed away, but there were new fox tracks nearby.

In December K1 and N5 nested again. High tides and big swells threatened to wash the 3 eggs away, so sandbags were moved from an old Pied nesting site to protect this new Hoodie nest. Frustratingly the eggs were gone within the week. Sandbagging can also attract predators and highlight the nest, so this method is only used when absolutely necessary. During this time a second pair nested (B4/ub) with 2 eggs. The volunteer returned the following day to sandbag this vulnerable nest too, but it had been predated by ravens before the tides and swell could get near it.

Bherwerre Beach is a favoured hang out for juveniles and unpaired adults, and important winter flocking site for south coast Hoodies. Consequently, the decline in numbers across the region is particularly noticeable here. In winter 2018 there were some high counts with 11 and 9 birds counted in June and July respectively. However once birds took off to breeding territories the counts were usual-



Caves Beach Hooded Plovers chicks at 3 weeks old *Photo: Chris Grounds*



The Caves Hoodie family—two fledged chicks! *Photo: C. Grounds*

Hooded Plover breeding activity in the NSW South Coast Branch (northern region) - 2018/19 breeding season

SITE	PAIRS	NESTS	EGGS	CHICKS	FLEDG-LINGS	EGG FATE	CHICK FATE
Caves Beach (Mary's Bay)	C7/E6	1	3			Ue	
		2	3	3	2	H	Uc / 2Fl
		3	2			Ue	
		4	2	1		H/Ab(nV)	Uc
Bherwerre Beach Sighted C7/E6, K9/D3, J7, 2ub	K1/N5	1	3			Ue	
		2	3			Ue	
	B4/ub	1	2			RP	
Berrara Beach (Monument)	N2/ub	1	1			Ab (BW)	
		2	1			Ab (BW)	
		3	3			Ue	
		4	3			Ue	
Inyadda Beach	K9/D3	1	1			Ue	
		2	2			In	
		3	3	3	2	H	Uc / 2Fl
Buckleys Beach	B8/J2	1	3			Ue	
		2	1			RP	
		3	3			Fx	
		4 #	3	2	1	Ab(nV)/ 2H	Uc / Fl
Narrawallee Inlet	M0/D6	1	3	3		H	Uc
		2	3	3		H	SE?
		3	2			RP	
Pockets Beach (Bommie Beach)	A8/C9	1 #	3			2eUe/1eAb	
		2 #	3			Ab (HI?)	
		3	3	3	2	H	Uc / 2Fl
Racecourse Beach Sighted D4, A8/C9, M5, B0	J1/L9	1 #	3	2		Ab(nV)/ 2H	Ex (BW)
		2 #	3	3	1	H	2Uc / Fl
Wairo Beach/PtNE	M5/J7	1 #	3	3		H	Uc(RP/SG)
	M5/ub	2 #	1			Fx	
		3 #	2	2		H	RP
Lake Tabourie	E8/ub	1 #	2			RP / Ab	
		2 #	3			Ab (HI?)	
	ub/ub	3 #	3			In	
		4 #	3			RP / 2Ab	
Termeil Beach	M2/E2	1 #	2			Ab (nV)	
	ub/ub	scrapes					
Murramarang Bch Racecourse Beach	J7/B0	1	3			Ue	
		2	3			Fx	
Dawsons Beach	M4/H7	1	1			Ab	
		2	3	2	1	Ab / 2H	Uc / Fl
TOTALS	14	38	94	30	9		

<u>Abbreviations</u>	U(e/c) = unknown egg or chick loss	Fx = fox predation	RP = raven predation
H = hatched	SE = sea eagle predation	Dg = dog predation	SG = sea gull predation
Ab = abandoned	BW = bad weather	In = inundation	HI = human interference
Ex = exposure	Fl = fledged	# = nest caged	
nV = non viable			

ly only 2 to 3 birds reliably in residence during peak nesting time. Numbers increased again after the breeding season with 13 sighted in April, including 3 young fledglings. It is still a very promising sight, a flock of Hoodies on the south coast!

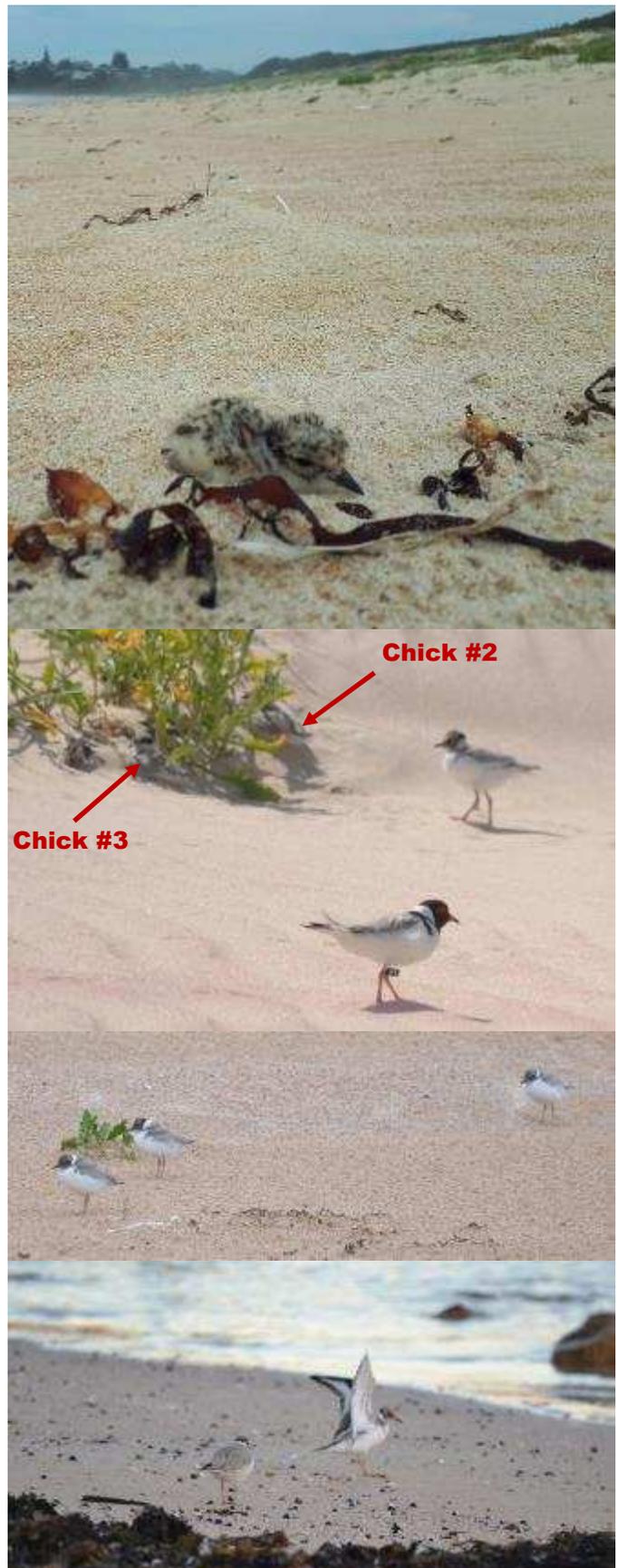
Further south at **Berrara Creek**, the resident Hoodie pair (N2/ub) were very unsettled early in the season. The first egg was found by volunteers on the 31st of August at their usual nesting site along the southern side of Berrara Creek entrance. But no further eggs were laid in the scrape and the nest was confirmed abandoned a few days later. The pair relocated to Monument Beach, laid another egg and were actually sighted incubating. However again, no further eggs were laid and the pair were off the nest a lot. A week later the egg disappeared.

Finally in early November the pair settled back at the creek nesting area and were seen incubating 3 eggs. At two weeks in, the nearby Pied Oystercatcher nest was predated by a fox just when it was about to hatch, likely drawn in by the chicks chirping inside the egg. The fox also took the Hoodie eggs. This was extremely frustrating as the fox trapper had removed 3 foxes on the powerline easement less than 1km up the creek and two of these foxes had been trapped in the week before the nest loss. We had assumed the area was fox free. One last nesting attempt in late December, with 3 eggs inside the creek fenced area. However, a week later the nest was gone.

At **Inyadda Beach** this season, we had a completely new nesting pair (D3/K9) with the usual resident pair (E1/L7) not sighted at all and presumed lost. The new pair were hanging out around the northern end of the beach in September and 1 egg was sighted in a nest scrape along the edge of the foredune vegetation. However, the nest and birds disappeared in a matter of days. Finally, the pair nested again in November. A 2 egg nest was found in a great spot perched on the side of the dune alongside the creek at the south end of the beach, the usual nesting area. A week later gale force winds and rain battered the site, washing away the nest. The nest and birds disappeared.

The pair returned for one final nesting attempt on the front of the dune just north of the creek in December. Despite a narrow beach meaning off leash dogs and beach goers passed by quite close at high tide, the pair sat tight and hatched their chicks in early January. They started moving north along the beach, outside of the fenced area, and we pursued them with more signs. We installed a line of signs, almost halfway along the beach to encourage dog walkers to stay down by the shoreline and save the upper beach for the vulnerable little family. The volunteers monitored the beach frequently, updated their local community website, talked to beach goers and dog walkers and basically just spread the word. Council rangers also assisted with extra patrols for off leash dogs. The hard work paid off and in February two chicks fledged. Sadly, one had been lost around fledging time, possibly to a raptor when it was learning to fly. But 2 out of 3 is great for a critically endangered species! Awesome work :)

At **Narrawallee Creek Nature Reserve** both pairs were sighted in August and made nest scrapes in early September. The northern **Buckleys Beach** resident pair (B8/J2)



Inyadda Beach - one freshly hatched Hooded Plover chick. Photo: Jodie Dunn ; 3 weeks old - One Hoodie chick out and 2 chicks hiding; still 3 chicks - 1st Feb and the two fledglings - 15th Feb. Photos: Jorj Lowrey

nested first with 3 eggs recorded on the 10th of September. A week later the eggs disappeared, and strong winds meant no trace of why. Two weeks later the pair laid a new 1 egg nest, but it was lost to ravens within a day.

On the southern end of the beach, at **Narrawallee Inlet**, there was a new pairing this season (M0/D6). M0 lost his long term partner J0 two years ago, then hung out with L9 last season but never nested, and now D6 joined him. They nested in late September between the two pairs of Pied Oystercatchers. The two fenced areas were joined together to create one big area for the three pairs of beach nesters. In mid October the chicks hatched, but they were all lost within the week.

A week later both pairs were scraping again, and the spit pair began laying eggs on the 31st of October under an old sea rocket frame. A week later the well hidden nest contained 3 eggs and the pair were solidly incubating. Meanwhile the northern pair were making nest scrapes and we even put a protective nest cage over the best scrape in case they laid eggs, but they didn't. The pair disappeared at times, indicating that they may have been quickly losing eggs to ravens before we could cage them.

In early December the spit pair hatched out their second clutch of chicks and a nest was finally found for the northern pair. It was a great well-hidden nest high on the beach, in between spinifex and washed up seaweed. We didn't want to disturb the area and thought it would be safe from ravens because it was so well camouflaged. However, a few days later the nest was gone, with fox tracks at the



The well hidden Narrawallee Inlet Hooded Plover nest Photo: J.Dunn



Buckleys Beach Hooded Plovers trying to hide their eggs too Photo: J. Dunn

scrape. This pair just couldn't catch a break. The spit chicks were rarely sighted and within a week were definitely gone. Frequent sightings of sea eagles and a wedge tailed eagle, could indicate the chick predator at the spit.

Both pairs began scraping again in mid December. One egg was found at the northern end of the beach and immediately caged for protection from ravens and foxes. A few days later there were 3 eggs safe and sound in the caged nest. Finally!

The spit pair also laid a 2 egg nest back under the rocket frame. Both nests were due to hatch in mid January, so in the last week of incubation wooden chick shelters and driftwood were added near the nests to give the chicks cover from avian predators flying over. Frustratingly on the next monitoring visit, the spit nest was gone and the rocket frame broken off. Raven tracks a few days later indicated the predator returning to check for more eggs. Perhaps the chick shelters and drift wood had indicated the location of the nest, very disappointing.

At the same time the northern pair hatched 2 of their 3 eggs and abandoned the last one, which when inspected revealed that it was not viable anyway. They quickly lost one of their chicks, and the last one was rarely sighted. The behaviour of the adults indicated that it still survived, but the diligent parents kept it hidden in the rocks. Rightly so after the succession of raven and fox attacks over the season. Finally, their efforts paid off and in late February the chick began flying. A fledgling for this pair at last!

The **Rennies to Bommie Beach** pair (A8/C9) were rarely sighted until mid September. The pair began making nest scrapes on Pockets and a few days later there was a 3 egg nest in the north-western corner of the small cove. The nest was caged to protect it from the fox passing nearby each night. Strangely 2 eggs soon disappeared from within the cage with no sign of how or why. The pair were sighted with a third Hoodie on Rennies, abandoning the last egg. What had taken the eggs from inside the cage?

A new one egg nest was found near the creekline on Pockets and the protective cage was moved onto it. A second egg was soon laid in the nest. After a week of incubation, the pair stopped sitting on the nest, and were sighted on Rennies Beach. Then they laid a third egg in the nest, but

this was more than 2 weeks after the last egg was laid. The following day the volunteer observed a man with his dog enter the fenced area, look in the cage and leave. The nest was abandoned. Had this man caused the strange behaviour and abandonment, or was it the unsettled weather, or a fox or raven?

This story gets even stranger though. Only 5 days after they laid the third egg in the Pockets nest, and the day after the abandonment of that nest was confirmed, a new nest was found on Bommie Beach. Strange breeding behaviour. Perhaps egg number 3 on Pockets was actually the first egg of this new round of nesting, but with the strange visitor disturbing the birds, maybe they decided to relocate and lay the remaining 2 eggs of the clutch elsewhere? Generally, there is a 1.5 to 2 week gap between nests. Anyway, this new nest was in a great spot behind the council log and wire fencing, on the slope of the dune. Inconspicuous and we allowed it to remain so, foregoing any signs, extra fencing or nest cages, despite fox tracks and the odd surfer or dog sitting too close.

The birds weathered it all and in late November all 3 chicks hatched out. The family moved north along the beach and we added a few chick shelters, as wind and heavy rainfall were forecast. Young downy chicks are extremely vulnerable to dying from exposure if they get wet. After the rain the family moved south and settled on Pockets Beach for 3 weeks. Sadly one of the chicks was lost and the family moved further south, amazingly navigating their way over the rock platform to Rennies Beach.

The now family of four moved to the southern end of Rennies. Signs were added on the beach accesses to let dog walkers know about the flightless chicks. Around fledging time the volunteer was away for a few days and on his return he only sighted one fledged chick, however the next volunteer south on nearby Racecourse Beach had seen the family of four, and the only way they could have gotten there was to fly! So two chicks must have fledged. The Racecourse volunteer sighted both fledglings again a few weeks later. A great result.

At **Racecourse Beach** this season J1 partnered with L9 instead of the usual resident D4 (despite D4 being sighted at Dolphin Point). The new pair (J1/L9) began making nest scrapes in mid August and by the end of the month they laid their first egg on the southern side of the lagoon. The nest was immediately caged, fenced and sign posted to protect it from the ravens and foxes, as well as the beach goers and off leash dogs. Early in October two chicks hatched out and the remaining egg was abandoned. It was inspected and found to be undeveloped. Only one chick was sighted, then both were confirmed gone, likely to exposure due to the cold, windy weather.

Three weeks later a new 3 egg nest was found back inside the nest cage! On the 21st of November there were no eggs left in the scrape, however only one chick was ever sighted. The volunteer installed signs alerting beach goers and dog walkers to the presence of the vulnerable flightless chick. The family moved all the way to the southern end of the beach and back again, possibly trying to avoid off leash dogs. Their efforts paid off and finally, towards the end of December that last remaining chick began flying!



Top to bottom: The Bommie Beach Hooded Plover chicks hiding in their chick shelter on Pockets. Photo: J. Dunn. The Bommie Beach Hooded Plover fledglings on Racecourse Beach. Photo: Chris Brandis. The Racecourse Beach Hooded Plover pair. Photo: Charles Dove. The almost fledged Racecourse Beach Hooded Plover chick. Photo: C. Brandis

At **Point Northeast** on Wairo Beach, one of the pair was lost last season (A4), and the remaining bird (M5) repartnered with J7. The new pair (M5/J7) laid 3 eggs near the lagoon in mid September, and the nest was quickly caged to protect it from the ravens frequently sighted. Disappointingly, quad bikes and trail bikes often ride along this seemingly remote beach, plus there were also 4wd vehicle tracks. The 3 chicks hatched on the 20th of October but were lost within a few days.

J7 disappeared and M5 remained alone on the beach. Finally in December he was joined by an unbanded Hoodie, and the pair (M5/ub) nested back in the lagoon area with a one egg nest that was quickly caged. Two and half weeks later the egg had disappeared from inside the cage and there were fox tracks all around. By the size and amount it looked like young foxes, and they had reached inside and taken the egg, perhaps it had gotten off centre and closer to the edge due to winds moving it. Then the foxes must have been able to reach in and grab it.

Two weeks later the pair nested again in front of the lagoon area, and it was caged yet again. Chick shelters and chick signs were added in preparation for the chicks hatching. At the end of January both eggs hatched. However the chicks were lost within a few days, with fox, raven and silver gulls all hanging around the area.

Down at **Lake Tabourie** one bird of the long term resident pair (E8/C5) was lost partway through the 2017/18 season. E8 then partnered with an unbanded bird. This season the pair returned (E8/ub) and nested at the lake on the 10th of September. The volunteers returned later that day with the nest cage, but the egg had already been taken by a raven. The following day, a second egg was laid and quickly caged. The pair incubated the egg for 2 weeks.

A raven was sighted in the area and the pair would leave the nest until the raven was gone. Then a second unbanded pair of Hoodies were distracting the nesting pair. On further inspection two days later, the egg had disappeared from inside the cage, and the volunteers think it had something to do with the extra pair of Hoodies. One bird of unbanded Hoodie pair continued to hang around and distract the pair, but finally they nested again 3 weeks later with 3 eggs at the back of the beach 100m north of the lake. Ravens were sighted so the nest was quickly caged. After 5 days E8 disappeared and the nest was abandoned, possibly due to human disturbance.

Now two unbanded birds took up residence and nested just north of the previous nesting site. Again the nest was caged and within a week they had 3 eggs in the scrape. A remote controlled car enthusiast was operating close to the enclosure but the local volunteer eventually managed to catch up with him. The nest was progressing well, then a week before hatching a big swell inundated the nesting site.

The pair renested 10 days later and the first egg was taken by ravens while the volunteer was retrieving the cage from the nearby old nesting site! Two days later another egg was laid and the nest was quickly caged. A second egg soon followed, but frustratingly the nest was abandoned after 2 weeks. In early January the pair began scraping



Empty Hooded Plover nest scrape after raven predation of the eggs
Photos: J. Dunn

again in the existing fenced area, but sadly one of the volunteers returned to find a pile of Hoodie looking feathers and tracks like a big ravens. It sounds like a raptor predated one of the adults on the nest. There were no eggs and no more nesting this season.

The resident Meroo National Park pair (M2/E2) nested again at **Termeil Creek** entrance this season. In early September 2 eggs were found and caged due to ravens at the site. A third Hoodie was sighted distracting the pair at around hatching time, then the nest was abandoned. The volunteers cracked one of the eggs and it was undeveloped. M2 and E2 disappeared after this incident and 1 or 2 unbanded Hoodies were sighted on the beach for the remainder of the season, perhaps some of the same birds that were interfering at Tabourie? The new unbanded pair made nest scrapes but no eggs were found. J7 turned up for a few days at the end of December and distracted the pair from their best nest scrapes.

In **Kioloa and Bawley Point** area the nesting pair from last season (J7/B0), were sighted on Racecourse Beach in August, then J7 disappeared and nested with M5 up at Point Northeast. After the loss of their chicks and a stopover at Lake Tabourie she returned to B0. In November the pair nested on Murramarang Beach at the mouth of Swan Lake. The nest was left uncaged in the hope that the pair could protect their nest and distract potential predators. However, two weeks later a fox took the eggs.

The pair relocated to Racecourse Beach and nested towards the northern end in front of the dune vegetation. Rather than a complete fence, just the north and south end were fenced to encourage people to walk down by the shoreline but also allow them to walk higher on the beach in front of the nest at high tide. After almost 3 weeks of incubation the nest was lost, likely to a fox as there were a lot of tracks around. A fox den was found and fumigated in the dunes only 10-20m behind the nest. What a poor nest site choice for the birds.

Further south in Murramarang National Park at **Dawsons Beach**, the resident Hoodie pair (M4/H7) began nesting in September. They laid one egg in the nest, but no more and abandoned it after a week, possibly due to unseasonably cold weather. The pair renested in October with 3 eggs in between vegetation along the southern bank of the dry

A BEACH USAGE RETHINK

by Chris Brandis

Racecourse/Burrill shorebird volunteer and site coordinator

After monitoring Hooded Plover nesting at the very busy Ulladulla Racecourse Beach as well as the quiet north Wairo Beach over the 2018/19 season, plus visiting the almost as busy Bommie and Rennies Beaches, I have had a bit of a rethink on the effect of disturbance on their breeding success rate.

After losing the first hatching through cold wet weather the Racecourse pair finally had a chick, one out of the three that hatched on the beach. A few days earlier the regular signs and asking dog walkers to keep to the shoreline and, if possible, on leash had commenced. The chick seemed smart enough to scarp away from feeding on the shore to the protection of the dune vegetation when people or dogs approached and ended up fledging.

Down at north Wairo the pair hatched two clutches of chicks which both disappeared within 2 days and one of the main differences was the number of Silver Gulls and Ravens hanging about along the shore and in the dunes, both known chick predators.

While watching the newly hatched chicks on Bommie beach I noted the male continuing to try and chase Silver Gulls away until a surfer and his dogs came along. "These dogs do not chase birds" he said and paddled off, but the dogs did wander up and down the beach. The Silver Gulls got sick of the disturbance and moved off and out came the chicks to feed. The dogs did ignore them and waited for their master. That pair fledged 2 chicks.

I am now thinking that well behaved people and dogs on the beach, staying on the shoreline as requested, keeps the predators away and allow the chicks to get established in their first week or so, while learning how to stay out of harms way. The main problem is to get the people to act responsibly. I have found that most of the regulars will do the right thing, especially seeing that I am also walking my dogs as I ask them to, and keeping them informed of the current chick status.

With the use of nest cages we have a very good hatching rate. But it is the getting the chicks to fledging, especially past the first week, that is the difficult process and, as there is little we can do about the weather, we can work towards getting more better behaved beach goers!

(I agree Chris and I am sure there are some other shorebird volunteers out there who do too - well behaved beach goers, and in particular, dogs, can help to keep avian predators away from our nesting shorebirds. Remote quiet nest sites are often predated. So we need to get the beach goers and dog walkers educated and keep them well informed. We need the communities help, especially during tourist season - editor).



creekbed. Two chicks hatched late in the month and the last egg was abandoned. Both chicks were doing well at this remote spot and were spotted at almost 4 weeks old by one of the NPWS Field Officer's, when he was replacing nearby fox baits. However only one fledgling was confirmed in early December. Still a great result!

Overall during the 2018/19 south coast shorebird breeding season fourteen pairs of Hoodies were monitored and incubated 38 nests containing 94 eggs. At least 30 chicks hatched out but only 9 of these chicks survived to fledge.



Hooded Plovers feeding on Racecourse ledge Photo: C. Dove

Little Terns



The first Little Terns were reported on the south coast at Lake Wollumboola, flying over in early October. However they did not hang around, but continued south with numbers remaining low at this site. Further south at Lake Conjola the Little Terns were not reported until the end of October, but by mid November there were 50 birds scraping and laying eggs. This was the main colony in the Shoalhaven area for the 2018/19 season, with smaller colonies at Shoalhaven Heads, Lake Wollumboola and Point Northeast.

The Little Terns were first reported at **Lake Conjola** on the 31st of October. By the 12th of November eight nests were laid out on the sandflats in the lake and two nests in the dunes at the entrance. With 40-50 adults and numerous nest scrapes, more eggs were definitely on their way! A large area was fenced and signposted to ensure dog walkers were aware of the nesting endangered shorebirds. On the 21st of November there were 19 nests containing 51 eggs on the sandflats and 5 nests containing 13 eggs in the dunes and along the back of the beach.

But then the bad weather came. In the first of the big swells, three nests were lost along the back of the beach, and then there were the strong winds. On the 23rd of November we dared not disturb the birds to survey the site, in fear that their unprotected eggs would be blown out to sea! The adults sat tightly on their nests, flattened against the ground while gale force westerlies scoured the lake.

The following day we were so excited that all but one of the sandflat nests survived the wind scouring. One of the dune nests was washed away at the back of the beach. A few more nests were laid on the sandflat bringing our total up to 23 nests, and 2 nests remained in the dune beach area. Then the rain came over the weekend.

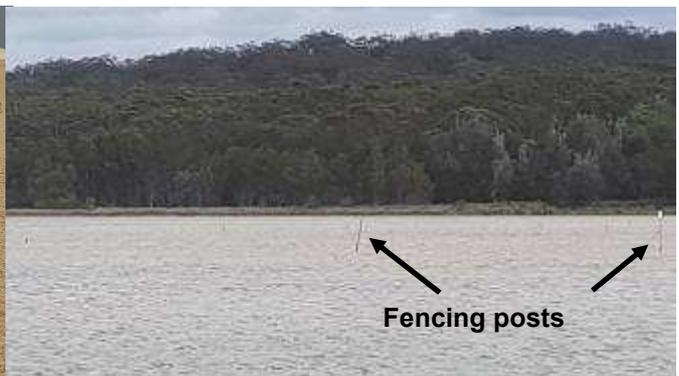
We returned on the Monday to a much higher water level in the closed lake. Only the top half of the sandflat fencing posts were visible sticking out of the water. The entire sandflat nesting area was lost, plus the last nest at the back of the beach. The only nest left was a 3 egg nest in the dunes. Surprisingly there were still at least 40 Little Terns flying around the site, they had not abandoned us!

The lone remaining nest in the dunes hatched 3 chicks on the 3rd of December. There was plenty of vegetation for the tiny chicks to hide in and they had a big fenced off area all to themselves. A few days later the Little Terns began making new nest scrapes in the dunes, on the spit and at the back of the beach, there were at least 50 birds again now. On the 8th the next round of nesting began and within a week there were 20 new nests containing 43 eggs.

The fencing materials that had been retrieved from the flooded sandflat site were dried out, cleaned up and reused to expand the dune fencing to encompass the new nests in the foredune and at the back of the beach, plus establish new fenced areas out on the spit. Two of the dune runner chicks were found hiding in the sign and fencing gear stash in the dunes! Very cute.



Little Tern nest on the sandflats with storm approaching Photo: J. Dunn



Flooded sandflat nesting site at Lake Conjola Photo: J. Dunn

In mid-December, the council decided to open the lake to reduce water levels and the flooding risk for the town. Many people would come to the beach to check out the entrance opening works, so a lot more fencing and signage was installed to ensure all nests were protected.

The nest count peaked on the 21st of December with 25 nests containing 53 eggs, plus all three dune chicks had survived and fledged. A few nests had been abandoned, one in particular had chosen a terrible spot along the edge of the lake right where the cormorants flock and a couple more were accidentally stepped on by people before they could be fenced. Due to the expansive nature of the spit and the nests being spread out, we ended up with five separate fenced nesting areas.

The chicks of this second round of nesting began hatching on Christmas Day and then the human population of Lake Conjola literally exploded. We did our best to fortify the nesting area, joining all four spit fences together to allow the chicks to roam wider and provide more protection from disturbance, plus adding a lot of signage. Lots of half buried plant pot 'chick shelters' were installed to encourage the tiny chicks to stay inside the fences and avoid venturing out where they would be trampled. The dune fenced area was much safer for chicks as there was plenty of vegetation for them to hide in, thankfully, as a vandalism incident saw the western side of the dune fenced



Lake Conjola's first Little Tern hatching, the three dune chicks and the Pied Oystercatchers watch over the lake entrance works Photos: J. Dunn

Little Tern breeding activity in the NSW South Coast Branch (north region)—2018/19 season

Site	Shoalhaven Heads	Lake Wollumboola	Lake Conjola	Point Northeast	Totals	
Nest start	4/12/2018	24/12/2018	12/11/2018	19/11/2018		
Nest finish	3/02/2019	19/02/2019	25/02/2019	26/12/2018		
Maximum adults	4	130	70	4	208	
Breeding pair numbers	2	10	30	2	44	
Nest total	3	10	67	2	82	
Egg total	6	21	148	6	181	
EGG FATE	Fox		6		6	
	Avian		2		2	
	Human Interference				0	
	Inundation		6	70	3	79
	Sand buried	2				2
	Rolled out (wind)			1		1
	Kangaroo crush			1		1
	Abandoned			2	3	5
	Non Viable			3		3
	Unknown	1	2	4		7
	Hatched	3	5	67	0	75
CHICK FATE	Fox		2		2	
	Avian		2		2	
	Exposure (storm)				0	
	Inundation				0	
	Abandoned				0	
	Dead near nest			2		2
	Unknown	1	1	18		20
	Fledged	2	0	47	0	49

ripped down and the plant pot ‘chick shelters’ stomped on and broken. Very disappointing but thankfully no chicks harmed that we could see, although I did find two dead chicks buried in the sand a week later.

In early January the council began work on trying to open the lake again with machinery on the beach. There were between 40 and 50 chicks on the spit and in the dune. Nearly every plant pot in the spit fenced area had a chick or three inside! In the dunes we didn’t see the chicks, but the little footprints between the vegetation indicated there were quite a few.

The council works continued for more than a week and chicks grew up and became highly mobile, a few ventured over to where the machinery was working, and one even needed to be rescued as it became trapped in the wheel ruts from the huge trucks. The work site was cleared of chicks each morning before works commenced, and council staff assisted by keeping a lookout. The works also attracted many onlookers, so the council constructed a buffer fence to reduce the proximity of people and disturbance to nests and chicks.

Throughout January chicks continued to hatch, and a few more new nests were laid. The smaller chicks loved the plant pot shelters in the spit nesting area, however there did not seem to be as many older chicks progressing through as expected. Then on the Thursday morning just before Australia Day long weekend, I arrived at the lake and sighted 30 fledglings gathered in the spit fenced area and along the beach berm!

With all the disturbance, hot days and lack of older chick sightings we had thought most had been lost. It was an amazing sight. This flock of fledglings continued to hang

around the nesting area until bad weather came through in early February, and many must have started the northward migration with their parents. A final late flush of chicks and 12 more fledglings were counted on the 11th of February, then the last two a couple of weeks later, bringing our total up to 47 fledglings this season. An amazing result!

At **Lake Wollumboola** Little Terns were sighted flying over in early October but nesting did not begin until late December. In total ten nests were monitored over three separate nesting areas. The lake was closed and the water level was very low, resulting in a maze of exposed mudflats and sandflats separated by a range of shallow and deep channels. The first nest of 3 eggs was found on Christmas eve on the southeast lakeshore near the old entrance channel.

Over the next week three more nests were laid in this main nesting area. Nest 2 disappeared to an unknown cause on the 9th of January. The first nest hatched on the 13th of January and 2 chicks were sighted. A fifth nest was laid. Then a fox was reported in the area and quickly predated 2 nests including 2 runners before we could remove it. Disappointingly there was a second fox and it predated the remainder of the nests. It was also removed, but too late.

Just west of this nesting area, across shallow water was a mudflat island with three Little Tern nests discovered on the 21st of January. Two nests and one egg from the third nest were lost in wave washover from strong winds a couple of weeks later. One egg remained. However, it was also later lost.

A third nesting area with two nests was recorded late in January. This nesting area was on the sandflats along the eastern side of the lake, also joined to the mainland, but



Vulnerable Little Tern chick ‘hiding’ outside the protective fence at Lake Conjola; much safer in their plant pot shelter. *Photos: J. Dunn*



Lake Wollumboola Little Tern on the nest; beautifully decorated mudflat nest; one of the first chicks to hatch. *Photo: Frances Bray*

thankfully the fox did not venture out there.

After the loss of the main nesting area, NPWS staff installed a small electric fence around each nest, just in case. One tern was sitting on 2 eggs and the other nest hatched 2 small chicks on the 10th of February. The chicks soon moved outside their protective fence to hide in the pigface.

Disappointingly on the 17th of February the volunteer found the eggs and chicks all gone, with raptor tracks in the area where the chicks were hiding. She believes it was likely to be a Black Shouldered Kite. A sad end to the season at Lake Wollumboola.

Up at **Shoalhaven Heads**, the first nest was found in early December with 2 eggs caged. A few days later it was lost



NPWS staff install the protective small electric fence around the Lake Wollumboola Little Tern nests. Photo: F. Bray

Pied Oystercatchers

On the south coast this season 32 pairs of Pied Oystercatchers were monitored nesting around our coastal lakes and estuaries and on beaches, a good increase on the 26-28 pairs monitored over the previous three seasons. This was mainly due to new nesting pairs at Dawsons Beach, Termeil Creek, Coalwharf and Crookhaven Breakwall and a newly discovered nesting site at Lake Illawarra.



It appears as though the local Pied Oystercatcher population has steadily been increasing over the twenty years of the shorebird recovery program. However early increases in breeding pairs were likely due to improved monitoring thanks to increasing volunteer numbers. More recently though, we are definitely seeing local increases in well monitored areas such Shoalhaven Heads, and new nesting pairs turning up in previously vacant territories. Very promising for an endangered species! But, we do still need more consistent monitoring further up in the lakes and estuaries. Pies can nest in quite remote spots so boats, kayaks or SUP's and dedication are required.

In the Illawarra region, a visiting shorebird volunteer reported Pied Oystercatchers incubating a nest on a little island in **Lake Illawarra** in early December. Further inspection of the site just off Horsley Inlet by ex-Shorebird Recovery Coordinator, Simon Tedder (OEH), reported a chick! He co-opted the assistance of Jade McGuiness (Shellharbour Council) and Madison Casley (shorebird volunteer) and together they monitored the Pied family. To everyone's surprise there was actually 2 chicks, which both fledged successfully in mid-January.

in strong winds. A second nest was recorded in mid December with another 2 eggs. Then a third nest of another 2 eggs a week later. The chicks hatched in early January with the 2 chicks from nest two surviving to fledge in early February. Sadly, the chicks from the third nest disappeared quickly. Still, a good result to get two more fledglings on the south coast.

At **Point Northeast** the first nest was found on the 19th of November, with 3 eggs at the back of the beach just north of the lagoon area. The nest was caged to protect it from the ravens frequently visiting. However, a week later this nest was washed away in a big swell. A second nest of 3 eggs was laid in early December, and this one was caged too. Two weeks later on a visit, there were 12 ravens in the nesting area. The Little Tern was not incubating its nest but was trying to chase them off. A few days later the nest was abandoned.

In total on the south coast 44 Little Tern breeding pairs incubated 82 nests containing 181 eggs across four nesting sites. From these nests 75 chicks hatched and at least 49 chicks fledged for 2018/19.

Further south at Crooked River entrance, **Gerroa**, resident pair (KW yellow engraved leg flag) and partner began making nest scrapes in late July. People were walking through the area and stepping on the scrapes so the local volunteer installed an early protective fence. This gave the pair the peace they needed, and by the 10th of August they were incubating a 2 egg nest. Despite the nest also being protected by a small electric fence, to keep foxes out, the eggs disappeared without a trace. Very mysterious.

In two weeks they had another 2 egg nest, and a month later both chicks hatched out. The beach was busy with October long weekend and one chick was lost in the first few days. The remaining chick was doing well until the father Pied, KW, was struck by a car and killed when flying over the bridge. A few days later the almost 4 week old chick was killed by ravens, as the mother was unable to defend it alone. A very sad end.

A new pair of Pied Oystercatcher came into the Gerroa territory and began making nest scrapes, however no eggs were found. One of the adults was reported with fishing line entanglement around both legs. Shorebird site coordinator, Sally Leonard, constructed special noose mats, successfully trapped the bird, removed the fishing line and released it right away. A great result. Hopefully the pair will nest next season.



Pied Oystercatcher dad "KW" (yellow engraved leg flag) teaching the chick how to feed at Gerroa's Crooked River Entrance Photo: Sally Leonard

Pied Oystercatcher breeding activity in the NSW South Coast Branch (northern region) — 2018/19 season

SITE	PAIR #	NESTS	EGGS	CHICKS	FLEDGLINGS	EGG FATE	CHICK FATE
Illawarra, Horsley Inlet	1	1	2	2	2	H	FI
Gerroa	1	1	2			Ue	
		2	2	2		H	HI/Rv
Shoalhaven Heads (berm) (rivermouth) (comerong island)	1	1	2			Fx	
		2	2	2	1	H	Uc/FI
	2	1	2			Ab (nV)	
		2	2			Ab (SB)	
3	1	3	1		2RP/1H	Uc	
	2	2	1		Ab/H	Mg	
Crookhaven Breakwall	1	1	2			Ue	
		2	2			Tr/Ue	
	2	1	1	1		H	Uc
Coalwharf	1	1	2	2		H	Uc (FI?)
Lake Wollumboola	1	1	3	3	1	H	Uc/Rp/FI
Green Island	1	1	2			nV	
Long Beach South	1	1	2	2	1	H	Uc/FI
Greenpatch	1	1	1*	1	1	H	FI
Mary Beach	1	1	2	1		Ab(RO)/H	Uc
Oaky Island	1	1	2			Ue	
Bherwerre Beach	1	1	3			U	
	2	1	2	2	2	H	FI
Sussex Inlet	1	1	2	1	1	1H / nV	FI
	2	1	2			Fx	
Berrara Creek	1	1	1	1	1	H	Ex (BW)
		2	2	2		H	Uc
		3	2			Ue	
Conjola Islands (east)	1	1	2			U	
Conjola Spit (spit) (dune)	1	1	2	2	1	H	HI/FI
		2	1	2		HI (stolen)	
	2	2	2	1		In/H	Uc
Narrawallee Inlet	1	1	2			In	
		2	2	2		H	Uc/Fx/WBSE
		3	2	2	1	H	Uc/FI
	2	1	2	2		H	Uc/WBSE
		2	2	1		H/Ab (nV)	WBSE/Fx
Burrill Lake (Peninsula)	1	1	2			Rv	
	2	1	2	2	2	H	FI
Termeil Creek	1	1	2	2	1	H	FI / Uc
Island Beach	1	1	3	3	1	H	Dg/Fx/FI
Dawsons Beach	1	1	2			Ue	
Duras Lake entrance	1	1	2	2		H	Uc
		2	2	2		H	Uc
	2	1	2	2	2	H	FI
Batemans Bay Marina	1	1	2	2		H	Uc
TOTALS 2018/19	32	44	89	49	17		

Abbreviations	Ab = abandoned	FI = fledged	U(e/c) = unknown egg or chick loss
H = hatched	nV = not viable	Rp = raptor predation	Fx = fox predation
In = inundation	SB = sand buried	Mg = magpie predation	WBSE = white bellied sea eagle predation
Ex = exposure	BW = bad weather	R = raven predation	Dg = dog predation
RO = rolled out	HI = human interference	Tr = trodden on	* = nest not observed - assumed 1 egg

Down at **Shoalhaven Heads** the **Berm** pair nested in early September. But the fox got through the functioning electric fence and took both eggs. This fox had eluded baiting programs and the shooter for weeks. The pair incubated a new nest throughout October, hatched both chicks, but lost one at 2-3 weeks old and fledged the other in mid-December.

The old **Rivermouth** pair finally nested in late October, then abandoned their nest at almost 4 weeks. Further inspection revealed one cold egg and the other broken and undeveloped (yolky). The pair nested again in mid-December, but frustratingly abandoned their eggs again just before hatching, the eggs were sand buried during strong nor-easters. Sally dug the eggs out twice to encourage the birds to return, the male initially showed interest and did sit again, but subsequently abandoned the nest again. Inspection revealed they were fully developed chicks.

The **Comerong Island** pair nested in early September but the first egg was quickly taken by ravens. The pair continued to lay and within a few days were sitting tightly on 2 eggs. After 2 weeks of incubation, a raven again stole one of the eggs. The last egg survived and hatched in mid-October, however it was sadly lost in a matter of days, perhaps to the fox that eluded the shooter. The pair renested in November, hatched one chick and abandoned the remaining egg, but again the young chick was lost in a few days.

Further south at **Crookhaven Breakwall** the pair (35 yelf) had 2 unsuccessful nesting attempts on the rocky breakwall with eggs disappearing only a week after being found. A second pair came in, laid a one egg nest further out along the wall, and hatched their chick, however it disappeared after a couple of weeks.

At the nearby **Coalwharf**, the pair hatched out 2 chicks in early December, then the family disappeared into the mangroves. Mangroves are great for hiding chicks, so let's hope they survived to fledge.

At **Lake Wollumboola** two pairs of Pied Oystercatchers were sighted in early September, with one pair having scrapes in the saltmarsh area where they nested in the previous season. By the 21st of September the pair were incubating 3 eggs. All eggs hatched in October but only 2 chicks were sighted, so the third must have been lost very early. In early November it was thought only one chick was left, then it was taken by a juvenile sea eagle.

There should be no chicks left, but the pair were still defending the nesting area, so hopefully there was? Finally, it was sighted. This last chick was hiding well and it survived to fledge. Later in the season on a visit to the lake we sighted numerous extra pairs of Pied Oystercatchers with fledglings, however it is unknown where they nested?

On **Beecroft Peninsula** (Defence Australia) the **Green Island** Pieds laid 2 eggs in mid-September but then abandoned their nest after at least 3 weeks incubation. The eggs were inspected and had not developed. This may have been due to the disturbance and lack of incubation resulting from territory wars with another pair of Pieds and a pair of Sootys, as well as people on the small island. No nest was found at all this season for the **Cabbage Tree Beach** pair.



The Shoalhaven Heads Pied Oystercatcher berm pair nest; fox caught on camera nearby; finally a fledgling for the berm pair Photos: S. Leonard. Lake Wollumboola Pied Oystercatcher nest and chick Photos: F. Bray



Long Beach Pied Oystercatcher chick stretching it's wings and getting ready to fledge. *Photo: Michael Jones and Wendi Johnson*

The **Long Beach South** (Defence Australia) pair finally nested in early November and the volunteers alerted the Beecroft rangers who quickly installed a protective fence. There is a boat ramp allowing vehicle access at the southern end of this beach, and people drive near the nest. Consequently, it is very important to establish space for the birds. The 2 chicks hatched in December but after 2 weeks, only one was sighted. This little one frequently hid in the rocks and finally fledged in January.

In **Booderee NP** (Parks Australia) a pair of Pies (YW yelf) were sighted with a young chick at **Greenpatch** in November. Perhaps the pair nested at the lagoon on the western end of the beach again (as in 2016/17), near the Creswell Navy base (Defence Australia). The family soon disappeared, and it was assumed the chick had been lost. Then 4 weeks later one of the volunteers reported YW, partner and almost fledged chick at nearby Hole In The Wall. The chick fledged in late December.

For the first time we recorded Pies (XD yelf) nesting at **Mary's Bay**. In mid-November Booderee staff reported a one egg nest, strangely with another cold egg near the scrape. We are unsure if it rolled out or was discarded on purpose by the pair. Their chick hatched out in early December but was lost at 2-3 weeks of age.



The Hole In the Wall Pied Oystercatcher family. *Photo: C. Grounds*



Bherwerre Beach 3 egg Pied Oystercatcher nest. *Photo: Brett Davis*

Bherwerre Beach is a long remote stretch of beach with sporadic monitoring, but volunteers did report a few Pied Oystercatcher nests this season. A 3-egg nest was found in the middle of this beach in September and sighted again in early October. The next survey was 3 weeks later, the nest was gone, and no chicks were sighted. There was a new 1 egg nest at the western end of the beach, possibly the same pair renesting.

Booderee rangers visited the following day to sandbag the nest to protect it from the increasing high tides and found 2 eggs now in the scrape. The nest was sighted again 3 weeks later but then the beach was not monitored for a month. On return the volunteers reported a chick in the same area, then 2 chicks about 2-3 weeks old. The chicks were regularly sighted throughout late December until mid-January, when it was assumed they were fledged.

At **Sussex Inlet** on the far southwestern end of Bherwerre Beach, the pair nested again this season on the spit at the entrance. The nest was fenced and signposted as it is right out the front of the Cove Resort (previously Bay of Plenty Lodges) and has sporadic high visitation. Throughout September the pair incubated their nest and one chick hatched. The remaining egg was abandoned. Despite ravens, sea eagles, fisherman, moored boats with off leash dogs, October Long Weekend visitors and vehicles on the beach, the little chick survived to fledge!

A second pair (yellow/red band L; metal R) nested further up the inlet with 2 eggs on the sandbank in mid-November. The nest was sandbagged on the 18th, and more were added over the following week as the tide height increased. The nest survived the tides, but then disappeared the day before it was due to hatch. Likely a fox drawn into the chicks chirping in the eggs.

In **St Georges Basin** the islands are monitored sporadically, only 1-3 times a month. On Oaky Island a 2-egg nest was found in late October, however 3 weeks later it was empty with no sign of chicks. No nest was found for a second pair sighted on Oaky and no nests were found on either Sepulchre or Garden Island.

The **Berrara Beach** Pied Oystercatchers began nesting at the start of September with a 2 egg nest alongside the creek. However, when the chicks were due to hatch, it was cold and rainy, and the young chicks were likely lost to exposure. The pair renested 2 weeks later close to their previous nest scrape. But, again just at hatching the new chicks disappeared. Fox tracks were sighted and the near-

by Hoodie nest taken as well. The fox likely drawn in by the new Pied chicks chirping inside the egg. The pair tried a third time, but the nest was lost again to an unknown cause, rain had washed away any tracks or evidence.

At **Lake Conjola** this season, the usual two Pied pairs nested at the lake entrance. The spit pair (1P yelf) nested in late August right out on the end of the spit with 2 eggs on a beach daisy mound. The other pair (metal band) maintained a scrape in the dunes for weeks but did not lay until mid September. Both nests were fenced, and the dune nest even had a small electric fence installed to protect it from a fox whose tracks were seen in the area.

The spit chicks hatched at the end of September and were sighted in their 'safe' fenced area, then October long weekend hit. Someone rode their bike around inside the spit fenced area and the family disappeared. We thought the chicks had been lost, then a few days later we heard a Pied Oystercatcher calling in distress and saw it dive bombing an off leash dog on the sand flats out in the lake.

I waded across and caught up with the dog owners who quickly got their dog under control when I explained the situation. To our delight there was one little Pied chick left huddling on the edge of the sandflats. We quickly installed signs to let dog walkers know about this endangered flightless chick trying to survive on the sandflats, which were often favoured as a dog run amok place! Surprisingly this chick survived and fledged in mid November.

Meanwhile over that October long weekend, the dune Pieds were also disturbed by people. The local volunteer witnessed a few teenage boys running close to the Pieds nest to get the birds to dive bomb them. They had removed part of the fence. He made a beeline for the boys and they took off. He repaired the fence, but on returning the following day, the fence had been vandalised again and the eggs stolen from inside the electric fence. A few

days later the energiser for the electric fence was also stolen. Long weekends are not kind to the shorebirds.

The birds re-nested a month later alongside the lake at the base of the dune, on a beach daisy mound. A small fence was installed, allowing people to still walk along the edge of the lake. Just at hatching time, the torrential rains came, and the water level rose in the closed lake flooding the nest. One chick survived but was lost 10 days later to an unknown cause. The pair was seen 'mourning' their loss, sitting on the log near the old nesting area.

Down at **Narrawallee Inlet**, two pairs of Pied Oystercatchers nested again this season. The first nest was found in late August at the back of the beach just north of the spit. A week later a storm surge had washed the eggs out of the scrape and they were both cold. Meanwhile the second pair was making nest scrapes on the spit and started incubating a 2 egg nest. The wash out pair re-nested 50m further down the spit. All eggs hatched in mid October but all chicks were lost within 10 days, possibly to the white bellied sea eagle seen patrolling the site or the fox whose tracks were seen sporadically.

The pairs re-nested back in the spit fenced area in late October and early November, three of the four eggs hatched, and two chicks were lost quickly, but one managed to survive. We rarely sighted it as the parents kept it hidden in the dunes and were very vocal and aggressive. Their hard work paid off and this one fledged in early January.

At **Burrill Lake** the Pied pair (3D yelf) on the private peninsula were incubating a 2 egg nest in late September. However, it was lost to raven predation, broken eggs were found. The second Peninsula Pied pair (DY yelf) were sighted in late September with 2 young chicks. Surveys in October only sighted one chick, until almost fledging age, then they disappeared. A month later the family



Young Pied Oystercatcher chick on the Conjola spit; Shorebird volunteer, installing the fence for the dune re-nest. Photos: Col Ashford and J. Dunn



Narrawallee Inlet Pied Oystercatcher 2 egg nest; newly hatched chick Photos: J. Dunn

(recognisable by DY's yelf) was seen NW of the bridge behind the shops with 2 fledglings! No nests were found on the Rackham Crescent mudflats or island although pairs were sighted.

At **Termeil Creek** we had our first recorded Pied Oystercatcher nest. The 2 eggs hatched in late November, and frustratingly trail bikes disturbed the site on a number of occasions riding down onto the beach and around the creek entrance right where the birds nested. One of the chicks disappeared at 2 weeks age and the remaining chick survived and fledged in early January! A pair of Pies hung around at Lake Tabourie this season even making scrapes but did not nest.

The **Island Beach** Pies nested in August and hatched their 3 eggs in September. All chicks survived until 3 weeks of age, then disappointingly a fox or dog attack resulted in the loss of one chick and another was found dead with a small injury. The volunteer located the remaining chick and adult and they "appeared exhausted". There were fox/dog tracks all over the beach. So disappointing, but the remaining chick did survive to fledge. A new pair nested at **Dawsons Beach** but their nest was quickly lost.

Further south at **Durras Lake** the usual pair that nest in the dunes south of the lake entrance hatched 2 chicks in late September, however these were lost 2 weeks later. A second pair nested out at the old lake entrance area and hatched their 2 chicks in late October. Both survived to fledge in December. Meanwhile the dune pair renested and hatched another 2 chicks in December, but they were both lost within a day.

Down at **Batemans Bay Marina** the pair incubated a nest in October in their usual spot in between the small mangroves in front of the creek. Both chicks hatched but were lost within a week.

Overall during the 2018/19 nesting season, 32 pairs of Pied Oystercatchers were monitored on the south coast and incubated 44 nests containing 89 eggs. From these nests, 49 chicks hatched out and 17 fledged.



Termeil Pied Oystercatcher fledgling (left) and parent; Island Beach three young chicks with parents; Durras nest chicks just hatched; Batemans Bay Marina mangroves nest.

Photos: J. Dunn, Marg Hamon, Reconyx and John Perkins.

Sooty Oystercatchers



The south coast Sooty Oystercatcher nesting islands were surveyed for breeding during the identified peak nesting period, in early November. Thankfully the weather and swell conditions all aligned, and we had a boat driver! Volunteers in the Jervis Bay area also surveyed Beecroft Peninsula regularly throughout the season.

In Beecroft Peninsula Defence Reserve a pair of Sooties nested with 2 eggs near the Pied Oystercatchers on **Green Island** in December. Only one egg hatched and the other was eventually abandoned. The parents took the chick into the mangroves to hide and continued to protect the area until it was presumed the chick had fledged.



Sooty Oystercatcher chick with limpet + crab claw dinner Photo: J. Dunn

On nearby Bhindijine Beach two older chicks were sighted in January. One of these chicks survived to fledge later in the month.

The northern islands, Brush and Belowla were surveyed on the 6th of November. On **Brush Island** of the 13 Sooty Oystercatcher pairs sighted, only 2 had active nests with only one egg each. There were however at least ten nest scrapes sighted and an additional 4 solo adults. Both ravens and swamp harrier were sighted which are known Sooty nest predators at this site, plus an old predated nest with eggshell was seen on the southern side of the island. It is difficult to know whether the Sooties had just started nesting or were onto their second round after losing eggs to the avian predators.

On nearby **Belowla Island** it was a similar story with 12 pairs but again only 2 with active nests. Three other nests had cold or broken eggs or eggshell remains, and there were at least 8 nest scrapes. Let's hope these birds are not constantly losing eggs to ravens and raptors on these exposed and open, flat rocky islands.

Further south on Grasshopper, Wasp, Tollgates and Snapper the survey was a little more promising. On **Grasshopper Island** there were 7 pairs and 7 solo adults incubating 10 active nests containing 17 eggs, plus another pair had a nest scrape. On nearby **Wasp Island** 8 pairs and 2 solo adults were incubating 5 nests containing 10 eggs plus there were 2 more nest scrapes. These islands have much more complex topography and nests are often hidden under ledges and between boulders.

In Batemans Bay on **the Tollgates** there was only 1 pair sighted incubating a nest on the north island but due to peak high tide we could not survey the northeastern part of the island where 2 more pairs are often located. The southern island had 3 pairs, 2 with 2 egg nests and another with nest scrapes. Further inside the bay on **Snapper Island**, 2 pairs and a solo adult were incubating 3 nests containing 7 eggs. There was a 3 egg nest at the northern end of the cave! Very unusual for Sooties.

The total south coast Sooty population surveyed for the 2018/19 surveys was 23 breeding pairs, 25 non breeding pairs and 14 individuals giving a total of 110 adult birds sighted. There were 30 nests containing 54 eggs, however due to the lack of follow up surveys on the islands, little is known about their breeding success on the islands this season. Only three chicks and two fledglings were reported from monitored mainland nesting sites on Beecroft.

Consistent surveys of all seven south coast islands were undertaken each season from 2007/8 to 2011/12. Over these five breeding seasons the total pairs on the islands ranged from 63 to 67, however last season only 54 pairs were sighted on the islands and this season only 48 pairs. Island surveys should be a high priority next season to determine if these numbers represent a steady decline in the Sooty population on the south coast or are just an anomaly due to other factors such as many pairs having just lost nests, or pairs not nesting yet due to weather and being on the mainland feeding at the time of survey.



Well hidden Sooty Oystercatcher nest on Grasshopper Island Photo: J. Dunn

Sooty Oystercatcher breeding activity in the NSW South Coast Branch (northern region) — 2018/19 season

	BP	Non BP	Solo Adult	Total Adult	Nest	Egg	Chick min	Chick max	Fledglings	Main Fate	survey date
Brush Island	2	11	4	26	2	2	?	?	?	?	6/11/18
Belowla Is	2	10		20	5	8	?	?	?	?	6/11/18
Grasshopper Is	7	0	7	21	10	17	?	?	?	?	9/11/18
Wasp Is	5	3	2	18	5	10	?	?	?	?	9/11/18
Tollgate Nth	1			2	1	2	?	?	?	?	9/11/18
Tollgate Sth	2	1		6	2	4	?	?	?	?	9/11/18
Snapper Is	2		1	5	3	7	0	0	?	?	9/11/18
Green Is	1			2	1	2	1	1	1	nV / FI	season
Bhindijine Bch	1			2	1	2	2	2	1	Uc / FI	season
Totals	23	25	14	110	30	54	3	3	2		

Abbreviations

FI = fledged

Uc = unknown chick loss

nV = non viable

? = unknown

End of Season Shorebird Get Together

In June the South Coast Shorebird Recovery Program staff and volunteers gathered for their end of season shin dig. The 2018/19 shorebird nesting season results were presented and this was interspersed with great discussions. Including communication strategies and program promotion lead by Terry Korodaj (SoS) and fox control tips and tricks lead by Nick Patrizi (Urban Feral Control). After morning tea, Paul Mahon (NPWS) gave a statewide perspective on shorebird recovery and results so far, plus introduced the new Field Manager app to the vols. We then sat down for a beautiful lunch and a special volunteer rewards presentation.

Rewards included NPWS years of service pins, Joco shorebird cups, shorebird books and limited edition prints of Jules Sydenham's beautiful local shorebird artwork. Of special note are Sally Leonard who volunteered 695 hours in 2018/19 and Rex Worrell who has been with us for 27 years! It was a great day thanks to the support of NPWS, Saving our Species, Volunteering Unit and the amazing shorebird volunteers :)



Migratory Shorebirds Project

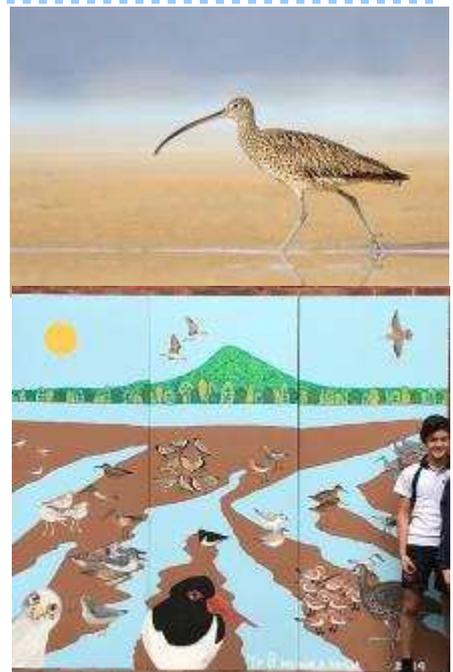
Saving our Species allocated three years of funding for the protection of migratory shorebirds at Shoalhaven Heads and Lake Wollumboola.

These amazing birds fly thousands of kilometres each year travelling between their breeding grounds in the Arctic and our coastline. Bar Tailed Godwit 'E7' was tracked flying continuously for 11700km over 8 days! These birds land here exhausted and need to be left undisturbed to feed and rest. Many species are now endangered due to loss of habitat and disturbance at important feeding sites.

So far, we have created temporary beach signs to warn beach goers not to disturb resting and feeding flocks of shorebirds, education contractors spoke to beach goers and monitored the shorebirds over summer plus we presented to the Shoalhaven Heads Community Forum and Nowra High School assembly!

There will be new permanent educational shorebird signage. The Shoalhaven Heads Bird Park will get a revamping with the high school kids mural and 3 beautiful metal sculptures of Eastern Curlew. At Birdhaven Festival in October we will have a migratory shorebird speaker, and a shorebird ID workshop.

Next season we will work with Culburra Beach community on a presentation, mural and shorebird workshop. A big thank you to everyone involved!



Summer Holiday Education Program

Thanks to ongoing sponsorship from the Shoalhaven Holiday Haven Tourist Parks and Saving Our Species, the shorebird recovery program was able to once again undertake a summer holiday shorebird education program. Over 15 big event days the education team undertook 9 morning key nesting site and 4 all day local market/event 'shorebird education stalls' plus 13 afternoon 'kids activity' sessions in tourist parks.

Shorebird Education Stalls include nest, bird and photo displays, leaflets, stickers, free dog leashes, plus two 'shorebird rangers' to speak to about local shorebirds. Kids activity sessions include an introductory shorebird presentation, painting calico bags, playing shorebirds snakes and ladders game and colouring in shorebird postcards.

These events directly engaged almost 1700 people in the summer holidays.

Thanks to our amazing 'shorebird rangers' Jackson and Monica!

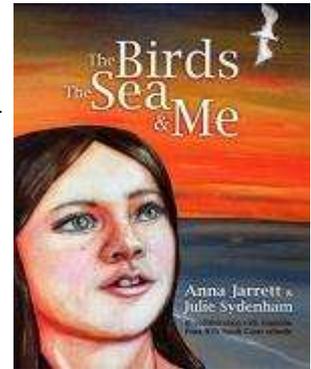


"The Birds, the Sea and Me" Kids Story Book

The creation of "the Birds, the Sea and Me" was funded by an Environment Trust grant in 2015/16. Writer, Anna Jarrett, oversaw the amazing process of running creative writing and art workshops in south coast schools with artist Jules Sydenham. Then the creative pair incorporated the school kids words and artworks into a beautiful storybook that captures the essence of the south coast and its endangered beach nesting birds.

The story follows 10 year old Rikki as she explores the beaches and learns about the shorebirds nesting there, while her Dad goes surfing. The Hoodies, Pies and Little Terns all feature in the story as well as their important nesting sites on the south coast. Every one of the 123 students involved in the project have at least one artwork incorporated into the book.

Books were donated to all south coast schools and libraries. Additional copies are available for \$20 each from jackson.rutter@environment.nsw.gov.au



Cooperative Fox Control Program

NPWS staff run almost 100 fox baiting stations from September to December in south coast National Parks estate for the protection of shorebird nests. **Saving our Species funding has allowed us yet again to extend this program**, to double its duration. For two seasons now SoS has funded starting the baiting in May. A great preseason initiative to get fox numbers down before shorebirds start nesting.

Then shooting and trapping are used to target the problem foxes left on the coast. A total of 45 nights of fox spotlighting and shooting were undertaken between Shoalhaven Heads and Durras from September to January. A total of 26 foxes were removed from beaches and private property near the coast. **Crown Lands funded a large proportion of this work on their land, and SoS supplemented the program to extend it onto NPWS estate and private lands.**

The Local Land Services funded by SoS and NPWS undertook 20 nights of fox trapping in October and November on Berrara, Conjola, Buckleys and Termeil beaches and adjacent coastal National Parks Estate. Between 11 and 25 soft jaw traps were set each night in strategic locations where fox tracks were sighted close to active shorebird nesting areas, resulting in a total of 399 "trap nights"!

Three foxes were trapped behind Berrara Beach in Conjola National Park and four in Narrawallee Creek Nature Reserve. Sadly the Berrara trapping didn't help the resident shorebirds with additional foxes still in the area, however the Narrawallee trapping did ensure a successful Little Tern nesting season.

Overall this is a great cooperative, multi tenure fox control program!



Site (PP = private property)	Nights	Foxes shot
Shoalhaven Heads	8	0
Coolangatta PP	1	3
Comerong Island PP	1	0
Lake Wollumboola	9	2
Wollumboola PP	1	0
Cudmirrah	2	1
Cunjurong-Berrara	7	0
Conjola-NCNR	4	0
Ulladulla Beachs	10	2
Wairo	3	1
Tabourie	3	0
Termeil-Meroo	3	1
Kioloa-Bawley	4	2
Bawley PP	2	12
Termeil PP	1	0
Durras	2	2

Shorebird Volunteer Communication Workshop

A follow up "Open Door" Communications Workshop was undertaken in May for those dedicated volunteers who missed the June 2018 session.

Bega councillor and facilitator, Ed Hill, led us through a 2-hour workshop on effective communication, techniques for controlling emotions, body language, physiology of fight or flight responses, and of course some role play and discussion of personal experiences. It is very important that we all maintain positive interactions with beach goers and dog walkers for the greater good and long-term sustainability of the shorebird recovery program, plus avoid "difficult" interactions for our own wellbeing.

The amazing volunteers were then treated to a beautiful lunch at Cupitts Winery!

This workshop was funded by the OEH volunteering unit.



Saving our Shorebirds



South Coast Shorebird Recovery Program Registered Volunteers 2018/19

Durras / Batemans Bay	<u>John Perkins</u> Paul May	St Georges Basin / Jervis Bay South	<u>Stan Brown</u> + Susan Garside-Brown Karen + Brett Davis Norm + Maureen Webb Barbara Liddle + Rob Dunn Robyn Hill + Doug Hargrave Yolande Cozijn Chris + Marly Grounds Wendy Hartman
Bawley / Kioloa	<u>Marg Hamon</u> (Bawley) <u>Robin Berkhout</u> (Kioloa) Maggie Mance Steve Berkhout Judith Carroll Robin McTavish Cecelia Bradley George Lemann	North Jervis Bay	<u>Wendi Johnson</u> + Michael Jones Diana Lindsay Les Lawrenson Anne Norton + Jack Middleton Jane Mussett
Tabourie	<u>David Swarts</u> Cathy Stapleton	Wollomboola	<u>Frances Bray</u> Michael Abramowitz Thomas Kaar Narelle Wright
Burrill / Racecourse	<u>Chris Brandis</u> Bob Rusk Charles Dove Abi Saunders	Shoalhaven Heads/ Gerroa	<u>Sally Leonard</u> Nicole Ison Rex Worrell Pat Tedder Graeme Searle Phil Craven
Rennies	Geoffery Brown	Illawarra	Madison Casley
Conjola / Narrawallee	<u>Col Ashford</u> Neal Cameron Dominique Toldi Jackson Rutter Monica Roso		
Inyadda	<u>Terry</u> + Carol <u>McBride</u> Jorj Lowrey Neil McGuckin		
Berrara / Cudmirrah	<u>Mike</u> + Rose <u>Clear</u> Margaret Webber Sue Tolley + Ronnie Kroon Pam McGilvery + Anne Finlayson		

Thank-you to the amazing shorebird volunteers!

