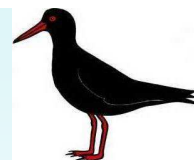
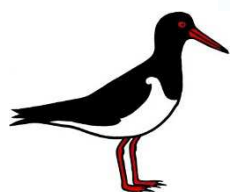




Office of
Environment & Heritage
NSW National Parks & Wildlife Service



SHOREBIRD RECOVERY NEWSLETTER south coast

Sharing the shoreline

2013/14 Season

This Season in Shorebirds

The **South Coast Shorebird Recovery Program** (Wollongong to Batemans Bay) is stronger than ever with around 100 volunteers contributing almost 4000 hours to shorebird nest protection this season. Many of the volunteers have undertaken the intro to shorebird nest protection course and are gaining valuable field experience. They share their knowledge with beach goers, dog walkers and the local community, thereby increasing understanding of our threatened nesting shorebirds on the south coast. This season a **Community Education Grant** funded summer holiday education events and local school workshop days, further raising awareness in local communities, school kids and visitors to the area.

The **Hooded Plover banding project** is progressing well with most birds now colour marked. This has allowed for more accurate NSW population estimates of ~70 Hoodies, an amazing increase on "less than 50" five years ago. Most of the increase has taken place in the south coast region with a doubling of our local population from around 20 to 40 birds. Sixteen breeding pairs are currently monitored between Jervis Bay and Batemans Bay (7 BP 2007/08).

The 2013/14 nesting season has had mixed results for our threatened shorebirds. **Little Terns** returned in good numbers to Lake Conjola and Lake Wollomboola late in the season, 67 chicks were fledged from the 71 breeding pairs. After poor nesting over the last two seasons due to raven and fox predation, this season was a great result.

Disappointingly for our critically endangered **Hooded Plovers** this was by far the worst nesting season on record.

Despite adult breeding pair numbers doubling recently, only 3 chicks fledged this season. This may be due to the new breeding pairs being inexperienced parents, plus fox predation is also on the rise. Lets hope that nesting success improves over the coming years.

The **Pied Oystercatchers** fledged 13 chicks from 18 breeding pairs, a great result. Long standing volunteers continue to observe local increases in their Pied populations. A good sign for the south coast population.

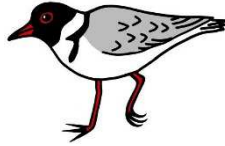
This season the **Sooty Oystercatcher** nesting islands surveys were not undertaken due to the local bushfires in October / November, when nesting is at its peak. However data from the previous seven years indicates a stable population on the south coast of around 70 breeding pairs.

Thank-you to all the amazing volunteers who helped protect endangered shorebird nests this season. Together we are making a difference to the local threatened shorebirds and awareness of the recovery program is growing in the community. **Thanks for your support everyone.**



A Little Tern nesting at Lake Wollumboola Photo: Duade Paton

Hooded Plovers



The critically endangered Hooded Plovers in the south coast region (Jervis Bay to Kioloa) are doing particularly well with yet another increase in the breeding population. An amazing sixteen breeding pairs (BP's) were monitored this season, an extra 2 BP's on last season and more than a doubling in numbers since 2007/08! This is an amazing result for such a critically endangered species. Thanks to all the volunteers and supportive south coast communities.

However despite the huge increase in BP's recently, this season was by far the lowest nesting success on record with only 3 chicks fledged from 81 eggs laid. We usually expect an average of one chick fledged per breeding pair. This low success may be due to all the new breeding pairs being inexperienced parents and not very good at protecting their eggs and chicks. Fox numbers also seem to be on the rise with the increased rainfall the last few years, meaning predation pressure is increasing. Lets hope that results improve over the coming seasons with nesting experience and more fox control through a new grant.

The northern extent of the Hoodies range in NSW is at **Mary's Bay** in Booderee National Park (Parks Australia). A 3 egg nest from the resident pair (M9 + H6) was reported by the local ranger on the 23rd of September. A further inspection on the 14th of October revealed one chick surviving but only days old, and an off leash dog entering the beach. The chick soon disappeared.

Three pairs of Hoodies nested on **Bherwerre Beach** this season. The first pair (B1 + ub) nested twice at the north end of the beach with 2 eggs in each, sighted on the 23rd September and 14th October, however no chicks were recorded from this pair. The second pair (E7 + A3) nested in the middle of the beach with 2 eggs observed on the 23rd Sept and 14th Oct, and one chick sighted on the 28th of October. This chick survived to fledge in December and was flagged (B0). A third pair (ub + ub) were sighted further south along the beach with one chick on the 27th of January. This chick fledged in late February (L4).

In addition to these 6 breeding adults, up to 10 additional



Hooded Plover chicks hatching out Photo: Jodie Dunn

Hoodies were sighted on Bherwerre Beach throughout the season including regulars K1, N5 and D3. This beach appears to be a favourite meeting place for solo Hoodies.

Hoodies were sighted on Cudmirrah Beach throughout the season (including E7 + A3), but no nesting reported.

The **Berrara Beach** Hoodie pair (C4 + N2) first nested in early September with a 3 egg nest found at the south end of the beach. This nest was quite unusual as it was on a ledge at the back of the beach. Significant beach erosion due to big winter swells, resulted in this ledge being the only viable option on the narrow low lying beach. In late September the eggs disappeared and it was hoped that the chicks had hatched. A line of signs were installed across the beach to alert dog walkers to the endangered chicks (despite this beach being NPWS estate and SCC dogs prohibited, off leash dogs remain a problem). The Hoodie pair remained on site, indicating chicks were present and to our relief a few days later two chicks were sighted. But sadly both soon disappeared, possibly to a raven, fox or off leash dog. The fox was finally trapped a week later.

Late in October after numerous nest scrapes on the ledge the Hoodies finally laid another egg. However, it was gone within a few days. A third nest was found in mid November, again on the ledge, with 3 eggs. But yet again, the nest disappeared, and ravens or an off leash dogs were suspect-



Banding Hoodie fledgling B0 on Bherwerre Beach Photo: Rob Perry



Berrara pair running along the shoreline together Photo: Graham Morgan

Hooded Plover breeding activity in the NSW South Coast Region - 2013/14 breeding season

SITE	PAIRS	NESTS	EGGS	CHICKS	FLEDGLINGS	EGG FATE	CHICK FATE
Mary's Bay	M9/H6	1	3	3	0	H	Uc (Dg?)
Bherwerre Beach	B1/ub	2	2	0		Ue	
			2	0		Ue	
	E7/A3	1	2	2	1	H	Uc +1 FI
	ub/ub	1	1	1	1	H	1FI
Berrara Beach	C4/N2	5	3	3	0	H	Uc
			1	0		Ue	
			3	0		Ue	
			1	0		Ab	
			2#	2	0	H	R?
Inyadda Beach	D5/L7	4	3	0		Ue	
			3	0		Ue	
			1	0		Ue	
			2#	0		HI (kids)	
Manyana Beach	ub/ub	1	2#	2	0	H	Uc (Dg?)
Buckleys Beach	B8/ub	4	2	0		Ue	
			3	0		Ue	
			1	0		Ue	
			1	0		U	
Narrawallee Inlet	M0/J0	3	2	0		In? R?	
			3	0		Ue	
			1	0		R	
Bombie Beach	C9/A8	2	3	0		R?	
			3	0		Fx	
Pockets Beach	^	2	1	0		Fx	
			1	0		Fx	
Rennies Beach	^	1	2	0		R	
Wairo Beach	A4/M5	1	2#	0		In	
Lake Tabourie	C5/E8	3	1	0		R	
			2	0		R	
			3#	3	0	H	Uc
Willinga Lake	E2/M2	1	3			R	
Cormorant Beach	^	1	3	3	0	H	2Fx+1Rap
Racecourse Beach	B6/ub	1	2	0		In	
Kioloa Beach	K0/H3	2	3#	0		HI (vandal)	
			3#	3	0	H	R
Dawsons Beach	L5/L6	2	2	0		R	
			3	3	1	H	2Uc + 1FI
TOTALS	16	38	81	25	3		

Abbreviations

H = hatched
Ab = abandoned
FI = fledged

Fx = fox predation
In = inundation
U(e/c) = unknown egg or chick loss

R = raven predation
HI = human interference
^ = same BP as above

Rap = raptor predation
Dg = dog predation
= nest caged

ed as the culprits. A fourth nest of one egg was laid in early December, but soon abandoned, possibly due to its location beside a track entering the beach.

The hoodie pair now moved further south and in mid December nested at the back of this wider section of beach near tufts of vegetation. This nest was able to be caged to protect the 2 eggs from predators. A month later both chicks hatched out. The first chick was lost at 4 days old and the second survived until 16 days old. The reason for their disappearance is unknown, but ravens and off leash dogs continue to be sighted on this beach.

The **Inyadda Beach** pair (D5 + L7) laid three eggs in early September at their favoured nesting site behind the dunes at the southern end of the beach. The nest was in a well concealed out of the way position but was lost within a few days. A new 1 egg nest was found and fenced in the middle of the beach on the 30th of September. The next day a second egg was laid, but then both disappeared within days. On the way back from retrieving the fencing materials, the volunteers found another 1 egg nest beside the creek back at the southern end of the beach, possibly the third egg for the mid beach nest. The area was re-fenced but again the nest disappeared in a few days.

This pair did not nest again for a couple of months. Then in early December a new 2 egg nest was found in their favoured southern nesting area. The eggs were quickly caged to protect them from predators. One day while the volunteer was repairing fencing, kids were playing inside the nesting area and despite being spoken to about staying clear of the nesting birds, the 2 eggs mysteriously disappeared from inside the cage. This was a very disappointing end to the season for this pair.

A pair of unbanded Hooded Plovers were regularly sighted on **Manyana Beach** and at Conjola spit. During the annual shorebird survey on the 10th of December, local volunteers, found a one egg nest in the middle of the beach in a small dune blow out. A few days later there was a second egg and the site was fenced and the nest caged. A month later both chicks hatched out during peak tourist season. Chick shelters and extra signage were added to discourage people from sitting in front of the fenced area. This would hopefully allow the chicks to access the shoreline for feeding. A week later one chick disappeared and the parents appeared extremely nervous of an off leash dog nearby. Soon after, the second chick also disappeared.

At **Narrawallee Inlet** the resident pair (M0 + J0) were found with a two egg nest in early September. All progressed well until the nest disappeared around hatching time in early October, possibly due to a fox being drawn in by the chirping of the vulnerable chicks inside the eggs. The pair laid again but this time further north along the beach, with 3 eggs in mid October. Again the nest survived until almost hatching time a month later. The fox drawn in again?

The pair tried a third time back at the inlet nesting area. One egg was found hidden underneath a sea rocket plant. A week later the spit was washed over, however the nest



Top: Inyadda Beach Hooded Plover pair (D5 + L7) Photo: Russell Johnson
Above: Their 2 egg nest found 1st Oct and lost in a matter of days (L)
new single egg nest further down the beach 4th Oct —possibly 3rd egg of the 1st Oct nesting (R)

Below: 2 egg Manyana Beach nest from a new Hooded Plover breeding pair. This one hatched chicks. Photos: Terry and Carol McBride





Washover at Narrawallee Inlet. But not to blame for the Hooded Plover nest loss—raven tracks at the nest indicate the culprit Photo: J. Dunn

did not appear to have been lost to the water as it was high on the side of a sand mound, instead raven tracks indicated the culprit of the nest loss.

A second pair at the northern end of **Buckleys Beach** (B8 + J2) started nesting in mid September with a 2 egg nest. The eggs disappeared within 2 weeks. The pair tried again with 3 eggs, but again the nest was quickly lost. A third nest of only one egg in mid October was gone in less than a week. Their fourth and final one egg nest lasted until hatching time but then also disappeared. Raven and fox tracks indicate that these predators were likely the reason for frequent nest losses in this remote and usually successful area.

One of my first walks this season in early September was to check out the local Ulladulla nesting pair (A8 + C9). Sadly all I found was egg shell and fox tracks on **Pockets Beach**. A week later there was a new nest scrape close by with one egg. I returned the next day to fence the nesting area but again found fox tracks and egg shell. The pair relocated to **Bommie Beach** and laid three eggs in late September. The nest only survived for a couple of weeks then disappeared, possibly to the ravens seen in the area.



Pockets nest loss - nest scrape, egg shell and fox tracks. Photo: J. Dunn

The pair then tried the opposite end of the beach in quite an unusual but excellent spot, inside the council dune fencing on the steep foredune slope. The nest was tucked out of the way and the volunteers didn't need to install a fence, just add signs to the council fencing. The nest was progressing well and due to hatch, when all three of the eggs were taken by a fox, right at that vulnerable time as the chicks start chirping inside the eggs just before hatching. If there is a fox in ear-shot, they cannot escape. The pair tried for a fifth nesting attempt further south on **Ren-nies Beach** in early December. The two eggs only lasted a few days before being predated by ravens.

On **Racecourse Beach** small flocks of Hooded Plovers were sighted early in the season with H7, D4, J1, and unbanded birds frequenting the area. Late in the season D4 and J1 appeared to be paired and nest scrapes were found at the back of the beach behind the lagoon. However no eggs were ever reported. J1 is a young male from the previous seasons fledglings so is only just reaching breeding age, but potentially may have nested this season.

The rock ledge along the northern end of Racecourse beach is a favoured winter flocking site for the Hoodies with up to 16 birds being sighted in past winters. This season flag codes have revealed the identity of many of these birds - A4, K3, N5 and M5 and fledglings B0 and D7, plus a few recent unexpected visitors including K0, the female from the Kioloa nesting pair, and the Wallaga Lake (FSCR) fledgling, Y8.

At the northern end of **Wairo Beach**, N5 was sighted making nest scrapes at the lagoon entrance with an unbanded partner. However no eggs were found. This is quite common on north Wairo where only 2 nests with eggs have been sighted over the last 8 breeding seasons. Ravens are very active on the beach and appear to remove eggs faster than we can find and protect the nests.

Later in the season a 2 egg nest was reported by one of the part time residents of the cabins on headland. The nest was right in the north corner of the beach and quickly fenced to avoid beach goers squashing the eggs. A cage was also installed over the nest the following week and the pair (A4 + M5), continued to incubate their nest. King tides and big swells almost washed the eggs away on new years day, coming within metres of the nest. We thought the threat was decreasing but then a couple of days later the swell direction changed and the nest was lost.

The first nest of the **Tabourie Beach** pair (C5 + E8), was found on the 27th of September in their usual fenced nesting area on the southern side of the lake entrance. However, it disappeared later that same day, probably to a raven. A month later a new 1 egg nest was found with the second egg laid the following day. But while the volunteers were waiting for the pair to start incubating before caging the nest, ravens again took the eggs.

The third nest was out on the sand island just inside the lake with the first egg located in mid November. The volunteers immediately caged this nest and the pair continued to lay with 3 eggs finally being incubated. The island was

also fenced to discourage kayakers and fisherman from disturbing the birds. The nest survived high water levels in mid December with the island mostly inundated.

In preparation for the imminent hatching beach debris such as driftwood and seaweed was placed on the island to provide cover for the chicks and encourage them to stay in this 'safe' area. A few plywood chick shelters were also installed. The three chicks hatched on Christmas eve and despite all the effort to provide shelter for them on the island, they headed for the beach early on Boxing day. The local site coordinator found them feeding along the shoreline while hoards of people from the caravan park headed to the beach.

We had not known that these tiny chicks could even swim off their island! So now, to avoid the chicks getting trapped and potentially squashed by all the beach goers, the volunteer herded them back to the safety of their island. He even had to carry the last chick over as it was left behind hiding in the grass. The family had a trip to the beach the following day but then thankfully decided to stay on their little island away from the busy beach. Despite all this baby bird sitting, as the days progressed, one chick was lost each night to an unknown predator. Their numbers dwindled until there were none left by the end of the month.

A couple of weeks later a new egg was found laid just inside the cage, however it turned out to be a smart Red Capped Plover who must have decided it looked like a safe place to nest!

At **Willinga Lake** (North Beach) female Hoodie, M2, was either sighted alone or being courted by two different males, E2 and L6. Nest scrapes were being made with both of her partners. She even visited Termeil Creek with E2 for a week in early October where they made nest scrapes together. However after a few more partner swaps with L6 at Willinga, finally on the 12th of November M2 and E2 settled and laid an egg. By the sixteenth there were 3 eggs in the scrape, but disappointingly just the next day a raven took all of the eggs. There were 6 ravens in the area and egg shell was found at the scrape. The pair disappeared from the site, but then a couple of weeks later a nest was found on nearby Cormorant Beach.

Since monitoring began in 2000, to our knowledge Hoodies have never nested on **Cormorant Beach**. This small bay is the only dog off leash beach in the Kioloa and Bawley Point area, so the nesting would cause serious issues in the local community. Therefore we decided to leave the nest alone for December to see if it survived. There was no way the chicks would survive busy January school holidays if the eggs could not even survive in the dunes at the back of the beach during much quieter December.

Hatching day quickly approached and just before Christmas, Shoalhaven City Council contractors assisted by erecting temporary fencing around the nesting area. However the council could not offer an alternative off leash area for locals, much to our dismay, as their legislation effectively now made this a dogs prohibited beach (SCC



Above: Tabourie group gets creative with their signs Photo: David Swarts
Below: Selfie - a few of the amazing Kioloa/Bawley Point volunteers who diligently wardened the Cormorant beach chicks Photo: Robyn Murphy



animal management policy: dogs prohibited within 200m of shorebird nesting area). The volunteers installed signage and undertook letterbox drops in the area to alert local residents and visitors. We all prepared for imminent hatching. Then on new years eve amidst fire works and parties the three little chicks emerged from their eggs unaware of the trouble brewing around them.

The local volunteer group kicked into gear and did an amazing job of wardening the chicks every day throughout January, organised via an online roster system. We decided to try to talk to everyone on the beach, in particular dog owners, and encourage people to stay clear of the area and keep their dogs on leash. It was a mammoth task for the volunteers. But thankfully most people were very interested in the amazing fluffy little critically endangered chicks on their beach. Plus they could often see them without binoculars feeding in the creekline alongside the path to the beach. This was a great educational opportunity as beach goers rarely get to see chicks.

Of course there were a few people who refused to leash their dogs, were quite rude or just ignored us, but all in all most beach goers and dogs walkers were supportive. The volunteers kept the scope at the beach to show passers by a close up view of the Hoodie family and also handed out educational material such as leaflets, stickers, kids activity books, frisbees and dog leashes. All was going well.

But then much to everyone's dismay, on the 30th of January just before fledging two chicks disappeared overnight and fresh fox tracks were found on the beach. The remaining chick who was a little smaller and had been nicknamed 'fearless freddy', due to its habit of wandering off by itself, also disappeared a few days later, probably taken by a raptor when learning how to fly.

It was a sad end to such an amazing month and a huge effort from the volunteers. The local group clocked up a total of 420 hours of hoodie wardening time over 36 days, averaging about 12 hours per day with no gaps for almost all the days the chicks were alive.

There are so many little stories I could tell you from their observations and reports over January, like the time two chicks went surfing, well actually they were feeding too close to the water and got picked up by a wave, washed around and plonked back on the shore or the kuffuffle created by a visiting interloper hoodie who attacked one of the chicks, but was quickly chased away by the protective parents or when the parents chased away the much bigger seagulls or the kind people who brought seaweed to the creekline so the chicks could feed on the bugs inside or just the beautiful days spent with wonderful people watching the little chicks feeding and resting in the creekline.

I can't praise the volunteers enough for their efforts. They educated so many people, and even though the chicks did not survive, the month they lived has opened so many peoples eyes to the plight of our local endangered shorebirds. For beach goers to see those little chicks and make the connection is just priceless, a great achievement for the long term success of the shorebird recovery program.



The Cormorant Beach Hoodie chicks story: just hatched in the dunes with parent; a portrait of 'Fearless Freddy'; fluffy bums under their favourite branch in the creekline; chick hiding under Mum (note the 4 legs); loving their 'chick shelter'; almost fledged chicks Photos: Robyn McTavish

A new Hoodie pair (B6 + unbanded partner), were sighted on **Racecourse Beach** early in the breeding season. B6 has a bad left knee and consequently the leg flag is on the right leg with the metal band. The unbanded partner is suspected to be a fledgling from the 2011/12 season, and has avoided trapping and banding 4 times. Numerous nest scrapes were reported from the southern end of Racecourse Beach, often in front of the caravan park and 2 eggs were found by a local volunteer. However the king tides combined with a southerly storm swell to wash over the beach and the nest was lost. The pair continued to make nest scrapes but no eggs were laid and they finally relocated to the quieter Bullpup Beach for the summer holidays.

The **Butlers lagoon** pair (K0 + H3), began nesting in September. The first egg was laid on the 27th and the area was quickly fenced and nest caged. By the 2nd of October the scrape contained 3 eggs and the pair were incubating. The fence was extended over the lagoon to reduce disturbance to the nesting birds. But only days later, over the October long weekend, the fence was vandalised with stakes broken and ripped out and the nest protection cage partly crushed. This resulted in the abandonment of the nest.

A couple of weeks later, the pair was sitting on another 3 eggs inside the same fenced area. A big swell forecast threatened to wash away the nest and an arc of sandbags was placed in front of the nest to divert incoming wave wash. The nest survived but ravens were hanging around and even sitting on top of the nest cage, less than a metre above the nest and causing the Hoodies to temporarily abandon incubation duties. In late November the 3 chicks

hatched so the local volunteers and I began wardening the chicks. I spent hours on the first day chasing away ravens and trying to keep the Hoodie family together, who kept leaving one chick behind but a different one each time. I thought it was an accident but perhaps this was a ploy to minimise the risk of losing all three chicks at once to the ravens? When the family was left unwardened for a few hours the next day, ravens took all of the day old chicks.

Down at **Dawsons Beach** in Murramarang National Park a new pair of Hooded Plovers began making nest scrapes. Hoodies have not nested at this remote site for 5 years. The pair (L5 + L6), continued scraping throughout August, September and October with the male, L6, also making forays up to Willinga Lake to make nest scrapes with M2. However finally in November, L6 committed and the pair settled at Dawsons to lay 2 eggs. At around hatching age both eggs disappeared with fox and raven tracks in the area. Their second nest of 3 eggs was laid nearby in early December. A raven suspected of predating nests was removed and the Hoodie nest went on to hatch in January. Two little chicks were reported and both survived to almost fledging age. One was sighted flying and banded D7. The fate of the second chick is unknown.

This season on the **south coast a total of sixteen Hooded Plover breeding pairs incubated 38 nests containing 81 eggs, hatching 25 chicks and fledging 3 of these chicks.** A record number of breeding pairs and nests were monitored but sadly not many chicks made it to fledging age. Fox predation of almost hatched eggs and chicks was more of a problem this season.

Little Terns



Little Terns returned in good numbers to Lake Conjola and Lake Wollomboola late this season. Probably, after abandoning the Tuross colony during a big washover in early December at this far south coast site. The late nesters had great success with at least 67 chicks fledged from 71 breeding pairs in the **south coast region**, including a couple of fledglings from Burrill Lake as well. After little nesting over the last two seasons due to raven and fox predation, this was a great result.

At **Windang** no Little Tern nesting was recorded this season. The 'Bird Island' nesting area is no longer maintained by the Lake Illawarra Authority and consequently there is little area left for shorebird nesting. Small numbers of Little Terns passed through the site, feeding and resting.

In early December a few Little Terns were reported at **Shoalhaven River** entrance and on the 22nd a nest was reported. The following day the nest was fenced and a second pair was present, possibly looking to nest too. In early January the eggs disappeared but the pair continued to defend the area. Finally a well developed chick was sighted on the 19th of January. However there were no further reports and the fate of this chick is unknown.

Little (and Fairy) Tern breeding activity on the NSW South Coast Regions—2013/14 season

Site	Pairs	Nests	Eggs	Chicks	Fledglings	Main Fate
Shoalhaven Heads	1	1	2	1	0	U
Lake Wollomboola	50	50	96	81	46	FI / Fx
Lake Conjola	18	18	34	28	19	FI / R
Burrill Lake	2	3	6	2	2	In / FI
Grand Total	71	72	138	112	67	

Abbreviations

FI = fledged

In = inundated

R = raven predation

Fx = fox predation

U = unknown fate

Little Terns were first sighted on the 25th of October at **Lake Wollumboola**, with numbers remaining at less than 10 birds throughout November and early December. The first nest was found on the 16th of December and over the next two weeks breeding pair and nest numbers began to increase rapidly. By the end of December there were 58 Little Terns present with 18 nests containing 40 eggs.

Throughout January terns continued to arrive at the site with more than 100 breeding adults present. New nests were laid until the 6th of February, bringing the total to 50 nests containing 96 eggs.

The colony was split quite evenly between 2 distinct nesting areas at the lake – the sandbar site (22 nests) and the mudflat site (28 nests). The protective electric fence was erected around the sandbar nesting site. The mudflat nesting site was initially on an island and therefore mostly protected from fox, dog and human impacts. However as the season progressed and the lake level dropped due to evaporation, the mudflat site became joined to the lakeshore.

The majority of nests contained 2 eggs, indicating that most breeding pairs had already nested elsewhere earlier in the season (first nests generally contain 3 eggs), but had been unsuccessful and relocated here. This is supported by the late start to the season, as the terns usually begin to nest in early November at Lake Wollumboola. In early December the huge Tuross river colony on the far south coast was washed away in king tides, and many pairs deserted the site, probably relocating to Lake Wollumboola.

The first chick hatched out on the 5th of January, with a total of 81 chicks hatching throughout the nesting season.

Six eggs were abandoned or not viable and 9 eggs in 5 nests were taken by foxes from the mudflat site when it joined to the mainland late in the season. A total of 23 of the 38 chicks at the sandbar site went on to fledge while 23 of the 43 chicks from the mudflat site fledged. The extra chick losses are accounted for by the fox attacks at the mudflat site late in the season. Five just hatched chicks were found dead in the nest scrape and at least one chick was taken by ravens.

Fox tracks were reported by volunteers throughout the season, and contract shooters were engaged. Two foxes were eventually removed from the site, but with difficulty due to the inability to operate when prawners, fishers and dog walkers were in the vicinity. Another two young foxes were found dead along the northern lakeshore, probably from the 1080 baiting program in the nearby Jervis Bay National Park and adjacent private property. Despite the successful fox control, it is estimated that a total of 23 chicks were lost to the foxes, as well as a nesting adult. Evidence such as tracks, digging around chick hiding places and scats indicated the predator.

Ravens had devastated the 2009/10 Little Tern colony at Lake Wollumboola, resulting in little or no nesting in the 3 seasons since then. Consequently raven activity was closely monitored by the volunteers. Ravens showed little interest until late in the season when ravens took an almost fledgling, and were observed inspecting the plant pot shelters trying to locate chicks. The volunteers removed the plant pots and the contract shooters soon removed the 4 ravens ensuring the last group of chicks survived to fledge.



Lake Wollumbool Little Tern colony: (clockwise from top right) the fish giving courtship ritual; the local volunteers bird watching; chick under parent; chick in nest scrape waiting for sibling to hatch. Photos: Duade Paton, Narelle Wright, Derek Wilcox and D.Paton.

Overall more than a 100 Little Terns were observed at Lake Wollumboola with 50 nests containing 96 eggs, hatching 81 chicks and resulting in 46 successful fledglings. This great success despite foxes and ravens continually threatening the colony is credited to the cooperation and dedication of local volunteers, NPWS staff and the pest contractors.

In addition to the successful Little Tern colony, other bird-life was amazing at Lake Wollumboola, with more than 100 species recorded at the lake including 16 threatened species. The low lake levels this season resulted huge exposed sandflat areas for feeding and roosting. Pied Oystercatchers were present in significant numbers with the volunteers observing up to 35 at a time, however no nesting was recorded.

Further south at **Lake Conjola** a Little Tern was first sighted flying high over the lake on the 28th of October, and a week later 6-7 terns were feeding around the lake entrance area. However these birds did not settle and numbers remained low and transient until early December. Twelve little terns were sighted on the 10th of December and the next day there were 2 nest scrapes. The first 4 nests were reported on the 15th with just one egg in each. Over the next week tern numbers quickly built up with 11 nests containing 22 eggs inside the fenced area.

As at Lake Wollumboola, most nests at Conjola were only 2 eggs indicating that these pairs had also probably relocated after the Tuross early December washover.

Over the next few weeks further nest were laid, with 18 nests in total containing 34 eggs on the Conjola spit. Two nests failed to hatch and 1 nest was buried in strong winds. However most eggs hatched with 28 chicks inside the fenced area. Numerous half buried plant pots were strategically placed to give the chicks extra shelter. As the chicks grew, they gathered along the shoreline waiting for their parents to come in from the ocean and feed them fish. However this also meant that the nesting area was largely now unprotected and the chicks from the last few nests were taken by ravens. These predators started patrolling the area once it was not being actively defended by a significant number of terns. The last nest was abandoned.

Overall the Conjola nesting site was successful this season with nineteen fledglings gathered along the shore one evening in early February. A great fledging rate from the 28 chicks that hatched from 34 eggs.

Down at **Burrill Lake**, in mid December two pairs of Little Terns were reported as possibly nesting on the spit. Further inspection revealed a 2 and a 3 egg nest, and the area was fenced. Early in January a big swell and king tide washed over the spit and the 3 egg nest was lost, however the other nest was higher up near the dunes and survived. Less than a week later both chicks hatched out, and a plywood shelter was added to give them extra protection.

Meanwhile the other tern pair re-nested nearby. But disappointingly over the next two weeks the spit was slowly eroded by big swells and tides with fence posts regularly

washed out, and their nest was again washed away. The little chicks from the other nest did survive, grew quickly and started flying in early February.

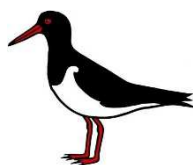
Little Terns were sighted at **Lake Tabourie** with up to 14 reported feeding and flying around the lake entrance in mid November. However despite their usual nesting area already being fenced and protected, none settled to nest this season.

In total in the **south coast region 71 breeding pairs incubated 72 nests containing 138 eggs, hatching 112 chicks and fledging 67 of these chicks.** A great result with such a late start to the season, almost half of all eggs resulted in fledglings!



Little Tern settling back on the nest at Lake Conjola; 3 egg nest in the dunes at Conjola; 2 chicks just hatched at Burrill Lake (top to bottom)
Photos: Mike Danesh-Myer, J. Dunn and Chris Martin.

Pied Oystercatchers



Eighteen breeding pairs of endangered Pied Oystercatchers were monitored around the lakes and estuaries of the south coast, including the usual strong-holds in the larger river systems at Shoalhaven Heads, Lake Conjola, Burrill Lake and Durras Lake.

In mid September a pair of Pied Oystercatchers were observed on the north side of **Lake Illawarra entrance**. The first egg was laid on the 4th of October and the local volunteers quickly fenced the area. The pair were seen mating again and the second egg reported on the 8th of October. The nest was progressing well with the pair regularly monitored and seen sitting on the nest. However sadly the nest failed to hatch and finally when 2 weeks overdue the site coordinator removed the eggs, to encourage the pair to nest again. In early December another 2 egg nest was located but in a terrible position, about to be inundated. The eggs were moved to the old nest scrape in a higher drier position but the pair failed to continue incubation. The eggs quickly disappeared to an unknown predator.

Pied Oystercatchers were also reported at Pelican View Reserve and Whyjuck Bay but no nesting recorded.

At the **Shoalhaven River** entrance the resident pair of Pied Oystercatchers began making nest scrapes in their usual nesting area in late August. On the 7th of September the first egg was recorded and the protective electric fence installed the following day. The second egg was laid on the 9th of September. A week later the high tide washed out half the fence, but thankfully not the nest. A chick hatched on the 12th of October but the remaining egg was not viable and was abandoned. The chick was not sighted for days, and there were reports of fox tracks, which made everyone think the worst. The pest contractor shot a fox in late October and the chick reappeared and went on to fledge on the 20th of November.

Numerous other Pied Oystercatchers were sighted in the Shoalhaven and Crookhaven River system. In early November, the second pair at the Shoalhaven entrance laid a 2 egg nest in a terrible spot, vulnerable to inundation and right in a walkway, plus they were not even incubating or protecting the nest. Within a week the nest was gone. The Illawarra Bird Observers Club found a 2 egg nest on

Pied Oystercatcher breeding activity in the NSW South Coast Region — 2013/14 season

SITE	PAIRS	NESTS	EGGS	CHICKS	FLEDGLING	EGG FATE	CHICK FATE
Windang	1	1	2	0		NV (HI)	
		2	2	0		Ab	
Shoalhaven Heads	2	1	2	1	1	H + NV	
		1	2	0		Ue	
Comerong Island	1	1	2	0		In	
Green Island	1	1	2	1	1	Ue + H	FI
South Long Beach	1	1	2	1	0	Ue + H	Uc
Garden Island	1	1	2	1	0	Ue + H	Uc
Conjola Entrance	2	1	2	2	1	H	Uc + FI
		1	2	2	2	H	FI
Conjola Islands	1 (BR)	1	2	0		U	
	1 (E)	1	2	0		U	
Narrawallee Inlet	1	1	2	2	2	H	FI
Burrill Lake Private Peninsula	2	1	2	2	1	H	Uc + FI
		1	2	2	2	H	FI
Durras Lake Entrance	1	1	2	0		R?	
		2	1	0		Ue	
Calm Cove	1	2	2	2	2	H	FI
Durras Lake	1	1	2	2	1	H	Uc + FI
Batemans Bay Marina	1	1	3	0		Fx	
		2	2	0		Ue	
		3	1	0		Ue	
TOTALS	18	22	43	18	13		

Abbreviations

H = hatched
In = inundation

Fx = fox predation
Ab = abandoned

R = raven predation
FI = fledged

NV = not viable (HI = human interference)
U(e/c) = unknown egg or chick loss



Shoalhaven River entrance Pied oystercatcher nesting: 2 eggs; chick just hatching under parent and one week old chick 'out and about' with Mum and Dad (top to bottom). Photos: Nicole Ison and Rex Worrell.

Comerong Island in mid November. However high tides washed the nest away later in the month.

Pied Oystercatchers were sighted on **Bherwerre beach** and the islands of **St Georges Basin**, with pairs noted on Sepulchre, Garden and Oaky Islands. On the 12th of September one chick of approximately 1-2 weeks age was reported on **Garden Island**. However it was not resighted on the 16th of September and assumed lost. The parents soon deserted the site. As the Pied Oystercatcher numbers built up again on Bherwerre beach (favoured winter feeding site) at the end of the nesting season, one juvenile was reported. The source of this fledgling is unknown.

Pied Oystercatchers were also sighted around the southern shores of Jervis Bay at Cundgerong Pt, Plantation Pt, Myola Pt and Moona Moona Ck, however no nesting was recorded.

On the **northern shores of Jervis Bay**, a new volunteer

group began surveying the area for Pied Oystercatchers. Birds were sighted at Myola Spit, Callala Bay Beach and near Red Rocks/Wiley Ck. Mating was even observed for the pair on Callala Bay Beach, however they disappeared and no nest was ever found. One bird from the Red Rocks pair is 'limpy' and the pair was regularly sighted, however again no nests found. Myola Spit appears to be very suitable habitat for shorebird nesting, however there is high disturbance due to off leash dogs. There was a second hand report of a pair nesting on Boorawine Creek, however this was apparently incorrect.

On the nearby Beecroft Defence land the local ranger reported a Pied Oystercatcher chick on south **Long Beach** in late October. However the chick was gone by early November. A second pair was reported on **Green Point island** and the new volunteers assisted local rangers with monitoring this pair. Nesting was suspected and one chick sighted in mid December. The chick went on to fledge in early January.

A Pied Oystercatcher pair was sighted at the northern end of **Berrara Beach** near the creek entrance early in the nesting season, however no breeding behaviour or nests were reported.

Two pairs of Pied Oystercatchers nested at the entrance to **Lake Conjola** this season. In late September the first egg was found in the dunes and the area quickly fenced by local volunteers. A few days later, a second egg was laid in the scrape and the pair began incubating. In early October the second pair nested nearby, also with 2 eggs and the fence was extended to protect their nest. Fox tracks were sighted in the area early in the season, however they soon disappeared, possibly due to intensive fox control work in nearby Narrawallee Creek Nature Reserve.

Both nests hatched successfully after a month of incubation and the pairs had 2 chicks each in the dunes in early November. However the Pieds were very different in their parenting techniques. The first pair being very aggressive and vocal defenders of their chicks while the second pair appeared unconcerned and quite submissive. Despite their



Green Island Pied Oystercatcher chick on the rocks and later feeding with parents - fledgling in middle with black bill tip. Photos: Wendi Johnson



Two little Pied Oystercatcher chicks hatching out in the dunes at Lake Conjola. Photo: Col Ashford

agro techniques, one of the first pairs chicks was lost after only a week, but the remaining 3 chicks all went on to fledge in December.

On the **islands in Lake Conjola** two Pied Oystercatcher pairs were observed with 2 egg nests in early October. However a month later both nests were gone and no chicks were sighted. The reasons for frequent nest losses on these islands is unknown. Raptor predation and possibly human disturbance are the most likely causes. More frequent monitoring and remote camera work is needed to understand the lack of breeding success.

The Pied Oystercatchers at **Narrawallee Inlet** are very aggressive nest defenders, which may explain why their 2 egg nest survived to hatch while the nearby Hoodie nest did not. The chicks were regularly sighted throughout October, with their vocal parents dive-bombing anyone within a hundred metres. Both Pied chicks fledged in mid November.

On the private land peninsula in **Burrill Lake**, a local volunteer and paddler reported 2 nesting pairs, in late August. One pair had a 1 egg nest and close by the second pair had 2 eggs. One bird from each pair had a yellow engraved leg flag above the right knee, 3D and L9. A couple of weeks later both nests were reported to now contain 2 eggs. In mid December a fledged chick was sighted with 3D. Both chicks from the second nest also fledged and were sighted.

Pied pairs were also reported on the large mudflats beside Rackerman Crescent and in the smaller reedy mudflat area behind the bottleshop and glassblowers, however no nests were found. Another pair was sighted at the lake entrance on the sandflats, one with a yellow engraved leg flag, DY but again no nests found.

Down at **Durras Lake** in early September the local shorebird volunteer reported that the Pied Oystercatcher pair were looking very broody and he was wondering if they had already lost a nest as he could not find any eggs and there were a lot of fox tracks in the shorebird nesting area. However, just the next day the first egg of a new nest was found and the area fenced for the breeding season. Two days later the second egg was laid and the Pieds began incubating their nest, despite a huge storm scouring the



Rainbow over the shorebird nesting area; helping out with the Durras fencing; the two Calm Cove almost fledged Pied Oystercatcher chicks following their parent. Photo: John Perkins

beach with strong winds.

All appeared well, when in just a matter of days one egg disappeared with no tracks to indicate the predator or fate. There were fox tracks further down on the beach, but then the Pieds were seen chasing off an aggressive Raven, the likely culprit. The remaining egg survived until around the estimated hatching date when one afternoon the egg disappeared, there were lots of Oystercatcher tracks around the nest and even more later in the day possibly indicating that a chick had hatched. However thorough searches of the area failed to locate a hatchling. Perhaps the chick did hatch but was soon taken by a predator as it moved away from the nest scrape, raven or fox most likely.

The pair tried nesting once more on the 1st November when one egg was found in a nest scrape at 1pm, but gone by 5pm with no tracks indicating the predator. It remains a mystery.

Another two pairs of Pied Oystercatchers were sighted further up in Durras Lake in December but no nests recorded. Then to everyone's surprise a pair with two chicks were reported at **Calm Cove**, along the beach to the north of Durras Lake entrance. Apparently a lady's dog had chased the chicks into the surf despite this being National Parks estate and a dogs prohibited area. The chicks survived their ordeal and went on to fledge successfully.

Significant numbers of Pied Oystercatchers often feed and rest at Cullendulla Creek on the opposite side of the Bay. Throughout the season local volunteers reported between



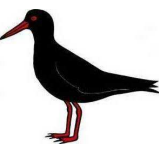
3 egg Pied Oystercatcher nest in the Batemans Bay Marina breakwall.
Photo: Meryl Hannan

3 and 13 Pieds on various occasions but no nesting. Despite this area being National Parks estate, off leash dogs frequently disturb the birds. The local ranger is pursuing improved signage and enforcement in the hope of reducing disturbance to these endangered birds and other shorebirds which favour the sandflats for feeding. Late in the season two fledglings associated with different Pied Oystercatcher pairs were sighted, however their origin is unknown. Perhaps elsewhere in the bay or further up in the Clyde River?

In August the local volunteer reported that the **Batemans Bay Marina** Pieds looked clucky and the first nest was found soon after in the breakwall on the northern side of the marina sand flat area. By the 1st of September there were 3 eggs in the nest but only a few days later all were gone, possibly to a fox roaming the area. In mid September a new nest was found in their usual nesting site on the opposite side of the sandflats, with two eggs in the rockwall under the pine tree. A week later again the nest disappeared without a trace. The third nest in late October was laid nearby, with only one egg. However it was close to the tideline and right where people walk, and consequently disappeared in a few days.

The Pied Oystercatchers fledged 13 chicks from 18 breeding pairs, which is quite a good result. Long standing volunteers at Shoalhaven Heads and Durras Lake continue to observe local increases in their Pied Oystercatcher populations at these sites, possibly due to the 15-20 years of nest protection and successful fledglings recorded. A good indicator of some population recovery in the south coast region.

Sooty Oystercatchers



Due to bushfires in late October and November, and subsequent unavailability of our NPWS boat driver, the Sooty Oystercatcher nesting islands were not able to be monitored during the peak nesting time this season. However data from the previous seven years indicates a stable population on the south coast of around 70 breeding pairs.

A one egg Sooty Oystercatcher nest was found on top of the fore dune on **Island Beach** in Murramarang National Park on the 19th of November. But less than two weeks later, the nest was gone with raven tracks indicating the culprit.

The Sooty Oystercatchers at **Bhindijine Beach** on Beecroft Peninsula (Defence Australia) had one chick in early December, however it is unknown if the chick survived.



A pair of Sooty Oystercatchers Photo: J. Dunn

Sooty Oystercatcher breeding activity in the NSW South Coast Region — 2013/14 season

Site	Pairs	Nests	Eggs	Chicks	Fledglings	Main fate
Brush Is	1 BP	1	1	0	0	Unknown
Belowla Is						Unknown
Grasshopper Is						Unknown
Wasp Is						Unknown
Tollgate Is's						Unknown
Snapper Is						Unknown
Island Beach	1 BP	1	1	0	0	Raven predation
Bhindijine Beach	1 BP	1	?	1	0	Unknown
Total	1 BP	1	?	1	0	Unknown

FNPW Hooded Plover Banding Project Report

The two year Foundation for National Parks & Wildlife Hooded Plover Banding Project ended in June 2014. During this project 54 adult Hoodies were trapped and colour marked, as well as 5 fledglings in 2012/13 and 7 fledglings this season. Resightings of banded Hoodies, along with estimates of remaining unbanded adult numbers brings the 2013/14 adult population estimate up to at least 67 Hoodies in NSW.

This is an amazing increase on the estimated 49 in 2009 and our catch cry of “less than 50 remaining in NSW”. This population increase is due to a doubling in the south coast region population from around 20 to 40 birds while the far south coast region population has remained stable at around 30 birds. Reports of flag sightings will continue to provide valuable information on the movements, breeding biology and survival of our Hoodies.



CEG Community + School Education Grant

The SCSRPP received a grant to undertake community and school education in the Shoalhaven throughout the 2013/14 nesting season and 2014 school year. ‘Dogs breakfast’ education tents were set up at beach reserves near shorebird nesting sites on ten mornings throughout the January holidays, while in the afternoon ‘kids activity’ sessions ran in the nearby tourist park or at the local beach reserve.

‘**Dogs breakfast’s**’ involved a free BBQ, shorebird nest displays, leaflets, stickers, free dog leashes and treats plus two rangers on site to speak beach goers and dog walkers. ‘**Kids activity**’ sessions involved an introductory shorebird presentation, painting calico bags, playing the shorebirds snakes and ladders floor mat game and colouring in shorebird postcards. It is estimated that these events reached around 600 people during January.

Following on from the holiday program, **school shorebird workshop days** were offered to south coast schools. The full day workshop involved a short shorebird presentation, trip to the beach with scoping, tracking, nesting, habitat and shorebird food sessions, volunteer dress up and ‘a day in the life of a hoodie’ drama role play, meet the scientist Q&A session and then wrapping it all up with badge making. This is where the kids get to combine everything they have learnt into a colourful shorebird badge to take home. Milton, Jervis Bay and St Georges Basin schools undertaken so far.



Shorebird Recovery Volunteer Conference 2014

In May 2014, for the first time, shorebird volunteers from the south and far south coast came together at the Kioloa ANU campus for a 2 day Shorebird Recovery Volunteer Conference.

There were presentations from the NPWS shorebird recovery coordinators, Birdlife Australia’s Beach Nesting Birds and Shorebirds 2020 programs as well as shorebird and seabird researchers and local shorebird volunteers. Four workshop sessions were held to improve volunteers skills in predator tracking, shorebird ID and communicating with beach goers.

All topped off with evening drinks, nibbles and a yummy Shorebird Volunteer Dinner. The vol’s definitely deserve a celebration!



Volunteer Recognition + Rewards

There are more than 100 volunteers registered with the Shorebird Recovery Program on the south coast. During the 2013/14 nesting season, together the group undertook almost 4000 hours of volunteer work. An amazing effort!

In order to reward and recognise the most hard working and diligent volunteers who significantly contributed to shorebird protection this season, we decided to present them with a special gift. These 7 volunteers dedicated more than 100 hours (and up to 315 hours) each - Rex Worrell, Frances Bray, Col Ashford, Marg Hamon, Robin and Steve Berkhout and John Perkins (pictured right).

These amazing, caring friends and protectors of threatened shorebirds have been presented with a beautiful framed photo of their local shorebirds.

Thank-you Rex, Frances, Col, Marg, Robin, Steve and John!



Rex retires after 20 years @ Shoalhaven Heads

Shoalhaven Heads volunteer site coordinator, Rex Worrell, has decided to hang up his binoculars after more than 20 years of monitoring and protecting the local shorebirds. He was watching over the shorebirds before our recovery program even began!

Over his many years of protecting the local nesting endangered Pied Oystercatchers he developed a close relationship with these birds. He can even talk to them and they listen! Rex tells the Pied to get back on the nest when he is putting up the fence and they do.

Rex estimates that the resident Pied pair has been nesting at the lake entrance for around 15 years. During that time he has protected their nests with fencing, signage and even a small electric fence to keep the foxes out. Thanks to his hard work many chicks have fledged and the local Pied population is growing, with sightings of up to 16 of these endangered birds throughout river system now.

Rex has also undertaken regular migratory shorebird counts, reporting the results to the NPWS. This data is invaluable and feeds into the Shorebirds 2020 database.



New LLS Enhanced Fox Control Grant

Through the Local Land Services 'Realise the Potential of Wetlands' grants, the shorebird recovery program was successful in gaining 3 years of funding to enhance fox control on the south coast. This funding will assist in the protection of threatened shorebird nests and chicks around identified priority wetlands.

The project includes improving the baiting program - increasing the duration, adding extra stations and using temporary beach stations (NPWS estate) to target problem foxes plus extra trapping and shooting nights, and working with private landholders for better landscape scale coverage in the fox control program.

With fox predation of eggs and chicks on the rise over the last three nesting seasons, this extra control work is greatly needed.







Saving our Shorebirds



South Coast Shorebird Recovery Program Registered Volunteers 2013/14

Durras / Batemans Bay	<u>John Perkins</u> Meryl Hannan Carmel Cox Barry Hart	Sue Tolley + Ronnie Kroon Denis Dent Valerie Grills Brett + Deb Stevenson Pam McGilvery
Bawley / Kioloa	<u>Marg Hamon</u> (Bawley) <u>Robin Berkhout</u> (Kioloa) Maggie Mance Steve Berkhout Sybille + Don Davidson Neil Brown + Judith Carroll Eve Jenkins Chris Louis Robynne Murphy Robin McTavish Tristan Napper Debbie Andrews Cecelia Bradley Helen + John Nelson	St Georges Basin / Jervis Bay South <u>Stan Brown</u> Karen + Brett Davis Norm Webb Barbara Liddle Robyn Hill + Doug Hargrave Ian Brown Judy + Graeme Watson Kerry Thompson Wendy Hartman
Tabourie	<u>David Swarts</u> Kaye Milsom Joan Lonergan Cathy Stapleton Natasha Pritchard	North Jervis Bay <u>Wendi Johnson</u> + Michael Jones Robyn + John Hawksworth Ann + Graham Warnock Diana Lindsay Les Lawrenson
Burrill / Racecourse	Chris + Jeannie Martin Bob Rusk Peter Lymbery Jenny Bryant + John Olsen Jack Robertson Tim Jamison + Barbara Evans	Wollomboola <u>Frances Bray</u> Michael Abramowitz Thomas Kaar Narelle + Alan Wright Allan + Margaret Goodall Duade Paton Derek Wilcox
Rennies	<u>Barbara</u> + John <u>Smith</u> Ken + Kay Smith Jensen + Linda Ruehle	Shoalhaven Heads <u>Rex Worrell</u> Nicole Ison Peter Ward Teena + Joseph Bronzino Carla Jackett Pat Hall Sally Leonard
Conjola / Narrawallee	<u>Col Ashford</u> + Maureen Deigan Eric Hardinge Carol Hodgetts Sandra Dodimead Robyn Kerves Neville + Maxine Esau	Windang <u>Chris Brandis</u> Ian Shaw Terrill Nordstrom Tim + Patricia Billington Charles Dove Paul Nesbitt
Inyadda	<u>Terry</u> + Carol <u>McBride</u>	
Berrara / Cudmirrah	<u>Mike</u> + Rose <u>Clear</u> Margaret Webber Maree Menzies	

Thank-you all for your passion + support  
  Jodie Dunn NPWS Shorebird Recovery Coordinator

