Office of Environment & Heritage
NSW National Parks & Wildlife Service

SOUTH COAST SHOREBIRD RECOVERY NEWSLETTER

Sharing the shoreline

2010/11 Season

This Season in Shorebirds

Yet another great season for the South Coast Shorebird Recovery Program (SCSRP) with more local volunteers joining us to help protect our local beach nesting birds. We had the best Little Tern season on record and good signs for the recovery of our beloved little critically endangered 'Hoodie'. With increased community awareness and support the program is going from strength to strength and the birds are enjoying less disturbance and improved breeding success. It is a great joy for the shorebird recovery coordinators to have the support of all these amazing volunteers, whose tireless efforts and passion for the shorebirds is obvious in the success of the program!

In the south coast region (SCR) a concerted effort was made to recruit volunteers and build up community networks in the area which has previously had relatively low volunteer numbers (in contrast to the far south coast region FSCR with its well established shorebird volunteer group). A Community Action Grant allowed the coordinator to undertake numerous community presentations and volunteer training workshops with a rewarding increase in volunteer numbers.

This growing community support has definitely helped these threatened birds nesting on our beaches. We had the biggest Little Tern colony on record at Lake Conjola, fledging an amazing 113 chicks and resulting in the best LT season on record for our program - a total of 162 breeding pairs (BP's), fledged 180 chicks along the southern coastline of NSW. An excellent result!

Furthermore, in the SCR we gained an extra two Hooded Plover BP's, taking the regions tally from 9 up to 11 BP's. This is great outcome after a decade of management. Coordinated surveys of the whole southern coastlines beaches in November by the volunteers confirmed our hopes of a growing NSW population with 59 Hooded Plovers counted. This is a definite improvement on our usual 'less than 50 remaining' catch phrase. Things are looking up for the Hoodies! Keep an eye out for returned fledglings in August and September with their not quite black caps, hopefully they will nest nearby…..

The SCSRP is growing and improving the protection and breeding success of our local threatened beach nesting birds. Volunteer support and increased community awareness is building an amazing protection program for our birds. Thanks to all the volunteers!

A Hooded Plover adult (right) and previous season's fledgling (left - note not quite black cap) at Lake Tabourie. *Photo: Steve Wallace*

Hooded Plovers

It was very exciting this season in the **SCR** to monitor even more breeding pairs of the Critically Endangered Hooded Plover nesting between Jervis Bay and Batemans Bay. After almost a decade of protection work we gained an extra breeding pair in 2008/09 bringing the region's tally up to nine (usually 7-8 BP's monitored 2003/04 - 2007/08), and then this season we gained a further two BP's with eleven pairs nesting on the south coast beaches. Hopefully the 'Hoodie' population is starting to recover in the area, such a promising sign after a decade of management!

In addition to the 11 BP's, a 3rd adult hanging around a pair or a lone Hoodie, and sometimes even winter flocking groups were sighted along the coast. Last winter on a walk along Racecourse Beach in Ulladulla a total of 16 Hooded Plovers including juveniles (previous seasons fledglings) and adults were seen scattered along the shoreline from the northern rocks to the lagoon area. An amazing sight when there are less than 50 left in NSW (or maybe not anymore)! The Birds Australia Biennial Survey in November confirmed our hopes for a growing local population when 27 Hoodies were counted between Jervis Bay and Kioloa (only 16 – 19 Hoodies in the SC 2001-2009). Is this the beginning of recovery for the Hoodie population on the south coast?

The northernmost Hoodies up at **Bherwerre Beach** nested 4 times this season with 3 eggs in each nest. The first nest hatched but chicks were lost to an unknown fate, the second nest was inundated, the third clutch of eggs was lost to an unknown cause and the fate of the fourth nest is unknown, but no fledglings were sighted on the beach. At nearby Bherwerre Beach another pair of Hoodies with 3 chicks were sighted in November but again their fate is unknown, as monitoring by the local rangers was infrequent. Fledglings were sighted in the area but it is not known whether they came from this site or further south.

The little one week old 'Hoodie' chick hiding in the sand cliffs at the back of Inyadda Beach. *Photo: Jodie Dunn*

At **Sussex Inlet and Cudmirrah** the volunteers were being given the run around by a pair of Hoodies who just wouldn't settle down with all the bad weather and off leash dogs. Finally they laid a 2 egg nest just south of the surf club, but only a few days later it was lost to ravens. The pair then turned up further south on **Berrara Beach** to lay another nest, which was again lost to ravens in a matter of days.

The **Inyadda Beach** pair has been very unsuccessful over the last couple of seasons with strange 4 and 5 egg nests that wouldn't hatch or were abandoned just before the due date. But finally this season the pair hatched out three eggs and fledged one of the chicks. However their second nesting attempt was unsuccessful with the 2 eggs being lost to an avian predator, possibly a raven.

The **Narrawallee Inlet** pair successfully fledged both chicks from their first nest early in the season. Soon after, another three eggs appeared (and another pair of Hoodies further along the beach – not sure if they were sharing the site?). The parents were rarely seen incubating the eggs and it was assumed it was all over, when surprisingly the little chicks hatched out and started roaming the beach. Just over a week later two chicks disappeared and new fox tracks were seen on the beach along with evidence of a chase - the culprit? Interestingly, a local bird watcher reported seeing a Sea Eagle take the two little chicks. The first we have heard of this raptor predating chicks. We tried fox trapping

A Hooded Plover with one of their newly hatched chicks at Bherwerre Beach (Jervis Bay). *Photo: Louise Oliver*

The 3 egg Hooded Plover nest at Narrawallee Inlet. *Photo: Jodie Dunn*

Hooded Plover breeding activity in the NSW South Coast & Far South Coast Regions — 2010/11 season

SITE	PAIRS	NESTS	EGGS	CHICKS	FLEDGLINGS	EGG FATE	CHICK FATE
Mary's Bay	1	4	3	3	0	H	Uc
			3	0	0	In	
			3	0	0	Ue	
			3	?	0	U	
Bherwerre Beach	1	1	3	3	?	H	PFl
Sussex Inlet	1	1	2	0	0	R	
Berrara Beach	1^	1	1	0	0	R	
Inyadda Beach	1	2	3	3	1	H	Fl/Uc
			2	0	0	AP	
Narrawallee Inlet	1	2	2	2	2	H	Fl
			3	3	0	H	Fx (SE?)
Bombie Beach	1	2	2	0	0	Ab (rain)	
			2	0	0	Fx	
Pockets	1^	2	3	3	3	H	Fl
			3#	0	0	Fx (Ab)	
Wairo Beach	1	1	2	0	0	R	
Lake Tabourie	1	1	3	3	2	H	Uc/Fl
Termeil	1	1	3	0	0	R	
Meroo Beach	1^	1	2#	2	1	H	Uc/Fl
Willinga Lake	1	3	3	3	0	H	Uc/WK
			2	0	0	R	
			2	2	0	H	Fx/WK
Kioloa	1	3	3#	2	0	H/Ab	Fx/R
			3#	3	2	H	Fl/Uc
			3#	0	0	Fx	
SCR Totals	**11**	**25**	**64**	**32**	**11(+3PFl)**		
Wallaga Lake	1	1	3	1	0	Ue	Dr
Bengunnu	1	1	2	2	0	Ue	Rp?
Bournda	1	2	6	2	2	G/Ue	Fl
North Long Beach	1	1	2	0	0	G	
Brandy Beach	1	1	3	2	2	Ue	Fl
Nullica	1	1	3	3	3	H	Fl
Terrace Beach	1	1	3	2	2	Ue	Fl
FSCR Totals	**7**	**8**	**22**	**12**	**9**		
Grand Total	**18**	**33**	**86**	**44**	**20 (+3PFl)**		

Abbreviations
Fl = fledged
SE = Sea Eagle predation
G = goanna predation
^ = same BP as above
H = hatched
PFl = Possibly fledged
Rp = Raptor predation
In = inundation
# = nest caged
Ab = abandoned
Fx = fox predation
R = raven predation
Dr = Drowned
U(e/c) = unknown egg or chick loss
WK = whistling kite predation
AP = avian predation

The three Pockets Hooded Plover fledglings with one of their parents (second from the right). Photo: *J. Dunn*

anyway to help save the last chick but it also soon vanished from the beach.

The Hoodie pair at the **Bombie and Pockets Beach** nested four times this season. They began in late July with three chicks fledged at Pockets by early October. Then the pair incubated two eggs on the Bombie Beach, however heavy rains washed away the sand mound where their nest was perched and the eggs were abandoned. Soon after, another two egg nest was laid just 20m away. However, a fox was roaming the beach, passing just behind the nest site, and we were unable to undertake fox control at this urban doggy beach. Sadly just as the chicks were about to hatch the fox came in and took them. The pair then tried nesting a fourth time back at Pockets and a protective cage was placed over the nest. However the fox was very determined and dug all around the cage. It did not get the eggs but caused the pair to abandon their final nest.

Further south at **Racecourse Beach** the resident Hoodie pair's first nest was sandbagged to protect it from rising tides and swell. The eggs survived to hatch and two chicks were seen roaming the beach. However they quickly disappeared and the parents were seen chasing a raven – probably the culprit. The next nest was laid further north along the beach, but within a couple of weeks it was lost to the full moon tides and swell. Finally the pair moved further north again and nested in the wider lagoon area. This nest was sandbagged however the eggs disappeared to an unidentified predator when almost due to hatch.

At north **Wairo beach** the second nest since the program started more than a decade ago, was located for this elusive pair. The two eggs were high on the beach and a quad bike had already come within metres of crushing them and dog tracks were very close by. This nest needed a cage with the raven and fox tracks everywhere indicating impending predation, and probably why we never find any nests. Upon my return only hours later with the cage, the nest had already been lost to the ravens.

At the southern end of this same long beach at **Lake Tabourie** entrance a group of three Hoodie's were regularly sighted early in the season, one adult and two juveniles. But after a few months a definite pair remained, hanging around the lake edge feeding, then surprisingly in late November the first egg was laid. The program had never sighted nesting Hoodies at Tabourie. A fence was quickly erected and soon there were three eggs. The nest hatched on Christmas Day, just as the tourists flocked to south coast beaches and the nest site was adjacent to the caravan park. However it turned out that a local's dog that was the problem and it chased the family along the lake edge on Boxing Day. The Hoodie parents took their two remaining chicks north along Wairo beach, away from the disturbance. The family managed to avoid foxes, ravens, dogs and quads further up the beach to fledge both chicks on Australia Day. Great parents!

At **Termeil Creek** in Meroo National Park a pair of Hooded Plovers nested in late September, however a week later the eggs had been lost to ravens. The 'Hoodie' pair moved further south to **Meroo Beach** where they laid another two eggs. The nest was caged to protect it from the foxes roaming the beach and in early February both chicks hatched out to roam the beach looking for food. One chick was lost in the first two weeks, probably to the fox in the area but the second went on to fledge in mid March.

At **Willinga Lake** this season the resident pair nested three times. From the first nest in September all three eggs hatched, but one chick was lost overnight. The second chick disappeared two weeks later, probably to the Whistling Kite frequenting the site and then the last chick was lost another week later. There were numerous unleashed dogs on the beach and the chick may have become separated from the adults (or trampled/ attacked?) and consequently very vulnerable to other predators.

The second nest of another three eggs was predated within a week, probably by a raven or raptor. With one last final attempt at nesting, two chicks hatched in mid January. However there were fox tracks on the beach

The 'Hoodie' family at Tabourie with two of their tiny newly hatched chicks. Photo: *Jane Chadwick*

John Perkins, Maggie Mance and Marg Hammon ready to install the Willinga 'Hoodie' fence to protect a new nest. *Photo: J.Dunn*

and the first chick was lost within a week, and a couple of weeks later the second chick disappeared, with raptors frequenting the site. The local Whistling Kite is really onto this pair of Hoodies and is thought to be the main predator of their little chicks.

Our southernmost pair in the SC nested at **Butlers Lagoon** on Kioloa Beach. The first nest of three eggs hatched out two chicks in late September, and the last egg was abandoned. A week later a fox was suspected of taking one of the chicks and then the second chick disappeared in mid October, probably to the raven frequenting the site. A couple of weeks later another nest was found with three eggs and the chicks hatched out in late November. Only two of the chicks were seen on the beach and both fledged just after Christmas. Surprisingly a third nest was laid just weeks later, with another three eggs. The nest was caged to protect the eggs from the fox seen in the area. However the determined predator dug into the side of the cage and undermined the nest so as the eggs rolled out, to be eaten.

In total on the **SC 11 breeding pairs of Hooded Plovers were monitored with 25 nests containing 64 eggs, hatching 31 chicks and resulting in at least 11 fledglings.** It is also possible that further chicks fledged from Jervis Bay area (Bherwerre/Mary's Bay).

In the **FSCR** this season 7 Hooded Plover pairs were recorded breeding between Batemans Bay and the Victorian border. This is comparable to previous years (6-9 breeding pairs) as is the total number of adults sighted within the region in recent years (previous seasons 23-32 adults since 2006), suggesting no significant decline or increase in the adult population on the FSC.

The northern most pair of Hooded Plover in the FSC region this season were again at **Wallaga Lake**. In early October five adult Hooded Plovers were observed foraging on the sand islands within the lake and soon after the territorial behaviour by one pair forced the dispersal of the other individuals. One of the pair is metal banded and is presumed to be the same individual observed breeding at Wallaga Lake for the past 3 breeding seasons. Luckily the incubation period for this pair was completed before king tides in December inundated the entire sand island nest site. Large sandbag piles of up to 6 sandbags high, with a 'chick ramp' on the side, were erected on the sand island in an attempt to give the recently hatched chicks somewhere to roost out of the water at high tide. They were readily utilised, however large waves swept in the lake entrance during one king tide event and increased the tidal heights above the sandbags. The single surviving 'Hoodie' chick drowned in the very strong current trying to swim to higher ground. The sandbag piles remained in place for up to 2 months afterwards as a nearby breeding pair of Pied Oystercatcher readily utilised them as nesting, roosting and refuge for their dependent chicks.

The fox dug into the side of the nest cage until the 'Hoodie' eggs rolled out to be eaten. *Photo: Robin Berkhout*

A pair of Hooded Plovers run along the shoreline leading potential predators away from their chicks. *Photo: Graham Morgan*

Hooded Plovers were sighted at the **Murrah River entrance** from 28th of September until the beginning of December. This is a new site for the Hooded Plover and it was hoped that the pair would commence breeding here however no nests were reported.

Mimosa Rocks NP is normally home to at least two pair of breeding Hooded Plover, choosing either Aragunnu, Bengunnu, Middle Beach, Gillards or Cowdroys Beach for nesting. This season within the park only one pair of 'Hoodies' bred, this being at the more remote **Bengunnu** site. Repeated checking at all other sites failed to find any adult 'Hoodies', apart from occasional foraging tracks. The Bengunnu pair were joined by a second adult pair in mid February, whilst they had 2 dependent chicks. On approach to the site on the 15th of February a Sea Eagle was observed taking off from the beach. When the survey team got down onto the beach a recently killed chick was found at the location from which the eagle departed. The chick was still warm, though clearly deceased, but without any significant signs of predation. It is thought that the eagle had captured the chick at just the same moment the survey team sighted and scared off the predator. The fate of the remaining chick remains unknown.

Bournda NP just north of Merimbula has proved a favoured site for one pair of Hoodies, however the majority of nesting attempts here are taken during the incubation period. This season one pair present from August onwards successfully hatched out two chicks in early February, after losing their first nest to goannas within days of laying. This second clutch was lucky to survive, with beachgoers near trampling the nest prior to fencing. Indeed the adults appeared to be skilled at hiding the chicks within the dune vegetation, as on a number of occasions they were not sighted only to be re-sighted upon the next visit. These final two chicks were successfully fledged from the site.

A Hooded Plover incubates a nest. *Photo: G. Morgan*

Further south towards Eden within Ben Boyd NP the pair at **Haycock Point** unfortunately lost their 3 egg nest to Goannas in early December. Whilst at **Terrace Beach** despite roaming Goannas frequenting the beach a second pair successfully hatched out 2 chicks in late February that went on the take flight in late March. The site has not had any successful nesting attempts in many seasons, so this is a very positive result.

Eden Cove is really a haven for two pair of Hooded Plover that for many seasons have contributed up to half of the region's fledglings. Often these two pair will successfully double brood and fledge two sets of chicks within the one season. This season was no exception with 5 chicks fledged from the two pairs - **Brandy Beach** had 2 chicks fledge mid January and **Nullica** had 3 chicks fledge late December. This latter site is a busy beach fronting a popular caravan park. Despite this the parent birds always seem to successfully incubate their eggs and weave their chicks around the many beachgoers frequenting the area. Consequently, minimal intervention and management is undertaken by the shorebird volunteers at these sites, due to the historical success of this bold parenting strategy.

The more remote areas of **Wonboyn**, including Greenglades and Baycliff were infrequently surveyed and up to three adult Hooded Plovers were sighted in the area. Scrapes were found in a known previous nesting site at Greenglades, however no eggs, chicks or fledglings were sighted in the Wonboyn area.

Opportunistic surveying by NPWS staff visiting **Nadgee NR** to undertake field work did not confirm any nesting activity for Jane Spiers or Newtons Beach.

Overall this season on **the FSC a total of 7 breeding pairs incubated 8 nests containing a minimum of 22 eggs. From these 12 eggs definitely hatched and 9 chicks were confirmed to have survived to fledging age.** As with previous seasons fledglings with unknown parentage were sighted, including a single individual at Wallaga Lake.

For the **southern coastline of NSW** monitored by the program we had a total of **59 Hoodie adults including 18 breeding pairs incubating 33 nests, containing 86 eggs, hatching out 44 chicks with at least 20 fledglings.** A great result for the NSW Hoodies and well above average for the program (9 – 14 chicks fledged per season 2001/02 – 2008/09, but not as good as the 31 fledglings in the amazing 2009/10 season). Hopefully we will see some of these fledglings pairing up and nesting on our beaches next season!

Little Terns

The Little Terns only nested at two sites in the **SCR** this season. The usual colonies at Windang and Lake Wollumboola did not result, with small numbers of birds stopping to rest and feed but then continuing south for nesting. Shoalhaven Heads nesting site was also by-passed. Last season these sites had poor success due to bad weather, raven predation and fox predation, respectively. It appears that the terns have 'bad memories' from this failed season and as a result, the Lake Conjola colony was the largest since monitoring began in the 1990's and another site further south at Lake Tabourie was recolonised by a small number of breeding pairs.

The first Little Terns were sighted at **Lake Conjola** on the 20th of October by local Ulladulla NPWS Ranger Libby Shields. A small group of six adults were flying around at the favoured spit nesting area. Over the nest couple of weeks, shorebird volunteer Col Ashford reported ten to fifteen terns at a time. After courtship behaviour of aerial chases and fish presentation, the first pair nested on the 2nd of November. Disappointingly this nest was abandoned after only a couple of days for an unknown reason. The next nest was laid a few days later, but was quickly predated by ravens. Consequently the following four 1 egg nests found on the 11th were promptly caged to protect the eggs from the ravens. However two of these nests were abandoned due to the interference of caging at such an early stage of nesting. It was a terrible start to the season.

However the Little Terns were undeterred and adult numbers quickly built up over the next week, by the 17th of November there were 68 adults present with 23 nests. The colony was observed 'mobbing' a raven, which was attempting to fly down into the nesting area. The Little Terns successfully warded off the potential egg predator. But, the ravens persisted and over the next week a few more nests were lost to them. A shooting operation on the 23rd sighted 4 ravens on Conjola Beach but they would not settle for long enough to shoot. Next the silver gulls also began to predate eggs. Their technique was different to the larger and more aggressive raven. The gulls loitered around the south eastern edge of the nesting area and when the terns were disturbed by a beach goer, dog or other potential predator that caused them to lift up into the air, the gulls would quickly sneak in and take the unprotected eggs.

At least 5 nests were lost to the gulls and a further 2 to ravens. Another 4 nests disappeared to an unknown culprit (probably the ravens or gulls). A second shooting operation on the 26th was successful at removing 6 silver gulls but no ravens. The avian nest predation ceased as the shooting operation had successfully targeted the loitering silver gulls responsible for the nest predation. Thankfully the raven predation ceased as well, as the Little Tern colony finally reached successful raven 'mobbing' size with at least 120 adults present now and 56 active nests.

The colony was growing each day and the fence was extended a number of times to protect outlying nests. Almost the entire spit at Lake Conjola was covered with nests, as well as a few pairs with eggs in the vegetated dune area. Lake levels continued to rise as consistent rainfall could not drain from the almost closed lake. Shoalhaven City Council (SCC) proposed options for getting machinery on site for the artificial opening, however due to the presence of the Little Tern nesting colony southern access along the lake edge or beach was not possible. Consequently, machinery access from the northern side was explored by SCC to avoid the tern colony.

On the 2nd of December the first chicks started hatching and over the next week a total of 56 chicks hatched. Half buried plant pots were provided to give the chicks extra cover out on the bare sand spit. They also hid amongst the sparse vegetation and beach debris and some chicks even made their way up towards

Little Tern breeding activity in the NSW South Coast & Far South Coast Regions—2010/11 season

Site	Pairs	Eggs	Chicks	Fledglings	Main Fate
Lake Conjola	100	295	223	113	Fl / Fx / R / SG / In / Ab
Lake Tabourie	4	8	7	7	Fl
Tuross Lake	13	22	14	14	Fl / Ue
Mogareka	45	167	69	46	Fl / In
Grand Total	**162**	**492**	**313**	**180**	

Abbreviations
Fl = fledged
Ab = abandoned
In = inundated
R = raven predation
SG = Silver Gull predation
Fx = Fox predation
Ue = unknown egg loss

the vegetated dune area for more substantial cover. There were a further 63 nests containing 124 eggs waiting to hatch on the beach. The colony had reached its peak with at least 100 breeding pairs present and a few more non-breeders and single adults as well.

The council finally opened the lake on the 6th of December with the shorebird coordinator watching for disturbance to the colony, which could threaten breeding success. Machinery entered the site from the north side of the lake entrance area, thereby avoiding the nesting area. The council set up extra barrier fencing to keep people out of the work site and away from the nesting area. Machinery operated to within 50m of nests however the birds were undisturbed and continued to incubate eggs and feed chicks. Later in the day people flocked to the newly opened lake entrance, ignoring the work site barrier fencing to get a close look at the channel. The extra barrier fencing did help channel people down along the ocean edge, thereby keeping them away from the colony. Again the Little Terns remained relatively undisturbed. Thankfully the channel did not migrate or erode significantly in the days after the lake opening and no nests were lost.

Over the following week further nesting progressed and by the 17th of December 110 chicks had hatched out and 42 nests were still waiting to hatch. With the full moon approaching and the summer 2 metre king tides, inundation of the low-lying nesting area on the spit was a serious threat. On the 21st of December the king tide combined with southerly swell at 7am in the morning to breach the berm of the beach and wash through the nesting area. Shorebird volunteers had already moved as many chicks as possible from the spit, into the higher dune area. A further 7 chicks were rescued from the washed up debris. Two nests were moved to higher ground and a further 11 nests were either raised on sandbags or had a protective sandbag wall built in front of them with a trench to divert incoming wave wash-over. Eggs from 6 nests were kept in numbered egg cartons and returned to their nests hours later when the water subsided, while a further 4 nests had their eggs washed away and mixed up to be randomly replaced in the closest nest. Two nests had their marker stakes and eggs washed out so were completely lost. Despite the major incursion into the nesting area, which took most of the day to clean up, the majority of nests and chicks were saved. However there were some unavoidable egg and chick losses and consequently adult tern numbers dropped slightly after the event.

The first two fledglings were sighted on the 23rd of December and over the next couple of weeks the peak in Little Tern chick hatching and fledging coincided with the influx of summer tourists to beautiful Lake Conjola. Extra signage and NPWS staff and volunteer presence on the beach attempted to limit disturbance to the nesting area. On new years eve around a third of the fence was vandalised along the western edge of the site, with fence and sign stakes broken or pushed over. However there was no evidence of entry into the nest-

Little Tern nest in the dunes at Lake Conjola *Photo: J.Dunn*

Volunteers Eric Hardinge and Col Ashford install fencing *Photo: J.Dunn*

A Little Tern chick awaits a band for identification *Photo: J.Dunn.*

A Little Tern chick begs for fish from the incoming parent *Photo: J.Dunn.*

ing area or loss of nests or chicks and the fence was quickly repaired. A further 7 fledglings were sighted on the 29th of December, then in January 61 fledglings were counted on the 5th, 73 on the 11th, 45 on the 18th and 52 on the 25th.

By the end of the month, most of the frantic Little Tern nesting season was over. The majority of chicks had fledged and adult numbers started to dwindle as the families began their migration north along the coast. There was still a small late round of nesting, probably from breeding pairs, which had lost eggs and chicks in the inundation event. There were 9 nests containing 11 eggs still present on the spit and up to 22 chicks hiding in the nesting area when a fox came through on the night of the 31st of January. From evidence of tracks and remains of chicks it appears that the fox predated the unfledged chicks over a few nights, but did not take eggs. It seems the remaining nests were abandoned due to the fox presence and ravens proceeded to take these unprotected eggs. The quick response attempt at trapping the fox failed and by the 4th of February the site was completely abandoned with all adults and fledglings moving off. An abrupt end to a very successful season.

At **Lake Conjola a total of 295 eggs were laid in 144 nests, 223 chicks hatched and at least 113 fledged successfully.** Fledgling counts were difficult due to the frequent rain and winds this summer which made the birds unsettled on the beach, and also caused some families to leave the site with their fledglings early. Therefore it is believed that 113 fledglings is a very conservative count for this site.

Little Terns had not nested at the entrance to **Lake Tabourie** since the 1950's, so it was very surprising when the site was recolonised this season. An area of the beach was fenced off to protect a new Hooded Plover nest, but then a pair of Little Terns also took a liking to this protected section of beach, and laid a 2 egg nest inside the fence on the 8th of December. A couple of weeks later another pair was courting at the site and by the end of the month 4 pairs were present. Three of these Little Tern breeding pairs had 2 eggs nests and a fourth pair was making nest scrapes. The fence was extended to give the colony more space with the summer tourist influx hitting the beach. Wooden chicks shelters were also installed to give the chicks cover and encourage them to stay inside their protective fence. In early January the first two chicks hatched out and the fourth pair had also laid a 2 egg nest.

The newly fledged Little Tern chicks gather along the beach berm at Lake Conjola, waiting for their parents to return with their fish dinner *Photo: J.Dunn*

Little Tern chick and adult near the new wooden chick shelters (one chick can just be seen hiding inside!) *Photo: J.Dunn*

Fox tracks were sighted on the beach to the north and trapping attempted, however the potential predator seemed more interested in the nearby caravan park rather than the shorebird area. By the middle of January the second nest had hatched both chicks, but then only one chick hatched from nest number three and the second egg was abandoned. The new chicks frequently used the wooden shelters for cover while waiting for their parents to bring fish to eat. On the 25th of January the first two fledglings were sighted and the fourth nest had also hatched out the last two eggs. The fox was lurking around and there were still five unfledged chicks when the fox's tracks came close to the nesting area on the 10th of February. But strangely the potential predator walked along the northern fence line and did not enter the site. Thankfully within the week all seven chicks had fledged successfully and for the remainder of the month the tern families could be sighted feeding in the ocean shallows and resting on the shoreline.

At **Lake Tabourie a total of 4 breeding pairs laid 8 eggs in 4 nests, 7 chicks hatched and all 7 fledged.** A great result for this newly recolonised site. Hopefully they will all come back to nest next season!

With sustained rainfall over the 2010 winter months on the **FSC** the majority of the lakes and estuaries (ICOLLS - Intermittently Closed Lakes and Lagoons) remained open to the ocean, some with significantly wide entrances that minimised the extent of the entrance sand spits. This, in conjunction with sand islands present inside the lakes being tidal and mostly covered at high tide, meant that the extent of nesting habitat for Little Terns on the FSC was reduced in comparison to the previous lower rainfall years. As a result only two sites on the FSC were chosen by Little Terns for nesting this season, namely Mogareka (Bega River Mouth) and Tuross Lake.

The larger Mogareka Little Tern colony was established earlier in the season (late November) and despite a complete wash over of the site in December and loss of some eggs and newly hatched chicks the colony

Little Tern adult in flight at Tuross Lake *Photo: John Cornish*

demonstrated above average fledgling success. The Tuross Lake Little Tern colony was not discovered until the Christmas – New Year week (busiest tourist time for Tuross) with the entrance sand spit proving a successful site for this small late-nesting colony.

The **Tuross Lake** was surveyed weekly for Little Terns from September onwards with the first sighting of 7 terns on the 9th of November. The small number of adults persisted at the site for many weeks with no sign of any nesting activity occurring until the discovery of 7 nests and many scrapes on the entrance sandspit on the 30th of December (however from the date of the first chicks hatching - the first egg was actually laid around the 18th). Whilst numbers grew up to 27 individuals, including one non-breeder, the colony remained small.

A large number of ravens were repeatedly sighted on the southern perimeter of the colony within the coastal vegetation, however no direct evidence of raven predation of eggs or chicks was observed during the breeding season. All but one nest was laid on higher ground away from the threat of inundation from high tides or

Little Tern chick hiding in beach debris at Tuross Lake *Photo: J.Cornish*

Little Tern runner size chick at Tuross Lake *Photo: J.Cornish*

increased onshore wave conditions, and consequently this single low lying nest was sandbagged for protection, which undoubtedly prevented its loss. The protracted season lasting approximately 10 weeks until the final fledglings took flight around the 23rd of February.

A total of 22 eggs were laid within 13 nests, all nests being 1 or 2 egg. All four single egg nests were lost to unknown causes, whilst the majority of 2 egg nests were successfully incubated to hatching. The outcome of nearly all nests could be confidently determined as a result of repeated frequent surveying by local volunteers and the small number of nests present. Consequently **all fourteen known hatched chicks were identified to have fledged.**

Mogareka at the entrance of the Bega River was the only Little Tern breeding site on the Far South Coast for a number of weeks until the establishment of the Tuross Lake colony in late December. The first 'small terns' both Fairy and Little's were sighted at Mogareka on the 28th of October, right on schedule when compared with arrivals in previous seasons. Three weeks later on the 19th of November up to 24 Little Terns were sighted and were getting ready to nest with many nest scrapes found across the entrance sandspit. The first nest was found within the week and 9 nests were recorded during a colony walk-through on the 25th of November.

Peter Collins, Amy Harris, Jill + Gary Whitely, Max Cook + Liz Allen surveying the Mogareka Little Tern colony *Photo: Jim Kelly*

Heavy seas and persistent rain around the 9th of December did not appear to deter nesting with nearly 40 nests being established during this time. The vulnerability of the site to big seas was demonstrated on the 22nd of December right before Christmas with king tides and big seas inundating the site and sweeping away a number of nests. A major sandbagging effort was undertaken by the local Mogareka shorebird volunteers with bunker style walls, trenches to divert water and raising of vulnerable nests on sandbags. Despite these efforts a number of nests were still washed away, but almost immediately a re-laying attempt was undertaken by many tern pairs, and over 30 nests were still active in early January.

At every colony walk-through in the ensuing weeks more nests were being laid and incredibly the last nest laid was 27th of January. A second sandbagging effort was undertaken on the 18th of January to protect new

Top to bottom: Mogareka Little Tern sandbagging crew get a briefing from ranger Robyn Kesby, an amazing sandbag bunker and the washover at the nesting area in December *Photos: Liz Allen + Jill Whitley*

vulnerable nests from predicted high tides and big seas. Luckily all nests remained high and dry through this second season threat of 'wash over'. The season came to a close in the week of the 24th of February with the last two chicks fledging from the site. This was timely as on the 22nd of March the Bega River catchment received record rainfall and flooding with the entire entrance sandspit nesting area being washed away. It will be interesting to see what the Bega River entrance looks like later in the year and what habitat is available for nesting shorebirds next breeding season.

At **Mogareka a total of 45 breeding pairs laid 73 nests, containing 167 eggs, hatching 69 chicks and fledging at least 46 of these chicks.**

A couple of Little Tern fledglings at Mogareka *Photo: L.Allen*

For the **entire southern coastline of NSW 162 Little Tern breeding pairs laid 234 nests containing 492 eggs, hatching 313 chicks and resulting in an amazing 180 fledglings!** This is the best fledgling result on record since the South Coast Shorebird Recovery Program began in 1999.

Fairy Terns

Interestingly another threatened small tern species , the **Fairy Tern (FT),** is gradually increasing its breeding range northwards along the Victorian coast to nest with our Little Terns (LT) on the NSW south coast. Over the past couple of decades numbers of FT's at NSW LT colonies have slowly been increasing. Recently the FT was listed as Vulnerable in Australia. Consequently we will attempt to monitor and report on this species more closely, however they are very difficult to distinguish from the LT's, as the markings are very similar.

Chicks from mixed Fairy/Little Tern pairing *Photo: Darryl Mackay*

This season at **Lake Conjola** at least 9 FT's were sighted at the LT colony. They intermixed, nested and even interbred with the LT's. There were 6 identified FT nests: 2 were definitely a pair of FT's, while 4 nests only had one adult FT present and therefore the partner may have been a LT. There was also a mixed pairing of LT and FT with 3 chicks. As these FT nests were interspersed throughout the LT colony, their chicks mixed with the LT chicks and were indistinguishable. Therefore the breeding success results of the FT cannot be separated and it is incorporated into the LT nesting data for Lake Conjola. Hopefully chicks will be flagged next season to allow better monitoring (see special projects)

FT's were also present at the **Mogareka** LT colony this season with 7 confirmed nests having at least one incubating FT parent. Identified FT nests were able to monitored at this site as the FT's nest in an area separate to the LT colony and consequently their success can be documented.

The first FT nest was laid on the 2nd of December near the LT nesting area. Similar to previous years the FT's nesting at Mogareka appeared to nest in close proximity to each other (2 to 3 m apart) and preferred the lower slopes of the entrance sandspit on the lake side. Up to 8 FT nests were confirmed containing 16 eggs. However one egg was lost to inundation, one egg was abandoned, one egg was inviable and three eggs were lost to unknown causes. At least nine chicks hatched out and four of these chicks went on to fledge.

A total of 13 confirmed pure FT or LT/FT mixed nests were on the southern coastline of NSW this season and at least 12 chicks hatched and 4 fledged. Closer monitoring will be undertaken next season on the southern coastline of NSW for more accurate breeding success results. Please read the special projects section at the end of the newsletter for more information on this banding project.

Fairy Tern at Lake Conjola feeding chick *Photo: D.Mackay*

Pied Oystercatchers

This season fifteen pairs of Pied Oystercatchers were monitored on the beaches and around the estuaries and lakes of the **SCR**. Most pairs preferred the sandspits and closed lake entrance areas, while many others nested on the small islands inside the lakes. For the first time since the program began more than a decade ago, two nests were monitored on the beach. This was possibly due to high water levels in the closed lakes, which resulted in flooding of nesting sites inside the lake.

New Pied Oystercatcher chick at Shoalhaven Heads. *Photos: Rex Worrell*

Up at **Windang** in the Illawarra area, for the first time recorded a pair of Pied Oystercatchers nested at the entrance to Lake Illawarra on the Little Tern purpose built 'Bird Island'. The Lake Illawarra Authority disturbed tern breeding habitat when constructing the northern breakwall at the lake entrance and consequently this compensatory habitat 'bird island' was built just inside the lake entrance from the sandy dredge spoil. In mid October the LIA was undertaking their usual 'bird island' maintenance works using machinery on the beach to dig out the channel, thereby separating the area from the mainland. The works were timed to be ready for the migration of the Little Terns along the east coast, however in a matter of days a pair of Pied Oystercatchers took up residence on the island and laid a 2 egg nest.

Small groups of terns passed through the site but did not stay to nest. Then suddenly the Pied Oystercatcher eggs disappeared. The local volunteer thought the worst as there had been people with dogs and boats on the island and they were not due to hatch yet. However to Ian's surprise both chicks appeared safe and sound. The chicks were progressing well at this busy urban site, and were often seen feeding on the sandflats under the watchful eye of their diligent parents. But just before new years one of the chicks was sighted with a broken leg, and a fisherman reported that he had removed the near fledgling from a dogs mouth while the owner disregarded the incident and said it was just 'a bloody sea gull'. Despite media and further questioning the perpetrator was never found and the worst was feared for the crippled chick. The chick spent a lot of time sitting rather than feeding and its ability to escape from further predators was also hindered as it hobbled about. Fox den fumigation works in mid December may have helped limit the predators at this busy urban site and thankfully the chick survived to fledge in early January.

Further south at **Shoalhaven Heads** the resident pair started nesting in late September with a 2 egg nest. Disappointingly just a week later the nest site was vandalised. The diligent volunteer at this site uses a small electric fence to protect the nest from predators such as foxes, however a teenager (estimated from footprints at site) had attempted to dig under the fence. When this failed the perpetrator just pulled out the fence posts and stole the eggs. Disappointingly the culprit was never found. The Pied pair laid a second nest 11 days later but after two weeks of incubation ravens predated these eggs. A third nesting attempt finally had two chicks hatching out in early December. One chick was lost within days but the second chick went on to fledge in mid January at 36 days old.

The Pied Oystercatcher on the nest at Windang 'Bird Island', watching over the chicks and the crippled fledgling. *Photos: Chris Brandis + Hal Bruce*

Pied Oystercatcher breeding activity in the NSW South Coast & Far South Coast Regions — 2010/11 season

SITE	PAIRS	NESTS	EGGS	CHICKS	FLEDG-LINGS	EGG FATE	CHICK FATE
Windang	1	1	2	2	2	H	Fl
Shoalhaven Heads	1	3	2	0	0	HI	
			2	0	0	R	
			2	2	1	H	Fl/Uc
Green Point (Beecroft)	1	1	2	2	?	H	PFl
Berringer Lake Island	1	1	2	0	0	In	
Conjola Lake Islands	3	4	2	2	0	H	Uc
			2	?	0	U	
			2	?	0	U	
			2	1	0	H/Ue	Uc
Lake Conjola Entrance	2	2	2	1	1	H/Fx	Fl
			2	2	2	H	Fl
Narrawallee Inlet	1	1	2	2	2	H	Fl
Burrill Lake	1	2	2	0	0	Ab (In)	
			2	0	0	Ab	
North Durras Beach	1	1	2	1	1	H/Ue	Fl
Durras Lake Entrance	1	1	3	2	1	H/Ue	Uc/Fl
Oaky Beach	1	1	2	0	0	AP	
Batemans Bay South	1	1	2	2	2	H	Fl
SCR Totals	**15**	**19**	**39**	**19**	**12(+2PFl)**		
Grey Rocks ENP	1	1	2#	1	0	Ue	Uc
Tuross Lake	5	5	2 Reedy Is	2	2	H	Fl
			2 Rocky Is	1	1	Ue	Fl
			2 Dunes	2	2	H	Fl
			2 East Is	2	2	H	Fl
			1 Tern Is	0	0	Ue	
Brou Lake	2	2	2	0	0	In	
			2	2	0	H	Ex
Wagonga Inlet	2	2	2	0	0	Ue	
			2	2	2	H	Fl
Tilba Lake	1	1	2	2	2	H	Fl
Wallaga Lake	3	3	1	0	0	Ue	
			2	0	0	Fx	
			2	2	1	H	PP/Fl
Murrah	2	2	2	0	0	Ab	
			2	0	0	Ue	
Bithry Inlet	1	1	2	2	1	H	Uc/Fl
Nelsons Lagoon	1	2	2	0	0	Ue	
			1	0	0	Ab	
Mogareka	1	1	2	1	1	Un	Fl
Wallagoot Lake	1	1	2	2	0	H	G
Bournda Lagoon	1	2	2	0	0	G	
			2	2	2	H	Fl
Haycock Point	1	1	2	0	0	Ue	
North Long Beach	1	1	2	0	0	Ue	
Saltwater Creek	1	2	2	0	0	Ue	
			1	0	0	Ue	
FSCR Totals	**24**	**27**	**50**	**23**	**16**		
Grand Totals	**39**	**46**	**89**	**42**	**28(+2PFl)**		

Abbreviations
Ab = abandoned; H = hatched; Fl = fledged; PFl = possibly fledged; U(e/c) = unknown egg or chick loss
R = raven predation; AP = avian predation; Dr = drowned; Ex = exposure; PP = pied oystercatcher predation

In late September, Holly Macken of Australian Defence at **Beecroft Peninsula** (Jervis Bay) reported a 2 egg nest at Green Pont. A few weeks later both chicks were sighted. However there were no more reports from the site therefore the fate of the chicks is unknown.

At **Lake Conjola Entrance** this season two pairs of Pied Oystercatchers again nested at the sandspit. Two one egg nests were discovered in mid September, one in the dune area and the other on the spit. The next day the spit egg had been lost to a fox, while the dune nest still had one egg. Two days later there were 2 eggs in the dune nest, and the spit pair were observed mating which quickly resulted in another egg being laid in their nest. In mid October both chicks hatched from the dune nest and were promptly taken south through the dunes and along the beach. Meanwhile the spit nest was overdue, but finally hatched after 37 days. This family stayed around the spit area and their chick even got in between machinery working to open the lake in early December. This caused a stop work while the chick was herded back onto the safety of the spit nesting area. All three chicks fledged and were sighted feeding with their parents in mid December on the sand banks around the lake entrance.

The **Lake Conjola Islands** were home to the usual three pairs of nesting Pied Oystercatchers again this season and the resident fourth pair nested on the sand island in the Berringer Lake arm. In late September there were 2 eggs on the 'boat ramp' island, 2 eggs on the 'post office' island and a nest scrape on the 'big island'. In mid October a 2 egg nest was also reported on the Berringer sand island. Further inspections in early November had 2 chicks on the 'boat ramp' island, another 2 egg nest on the 'post office' island and 1 chick on 'big island', while the Berringer nest had been lost to the high water levels as the flooding lake was almost closed at the entrance. In mid December all 4 Pied pairs were seen feeding either on their island territory or on nearby sand banks. However there was no territorial behaviour witnessed or fledglings sighted and all nesting attempts were recorded as unsuccessful. Interestingly a Sea Eagle was seen diving down to one of the islands and picking something up from the ground to fly off and eat it in a tree. Perhaps the predator of the Lake Conjola Islands little Pied chicks?

The Pied Oystercatcher family feeding on Conjola beach *Photo: J.Dunn*

At **Narrawallee Inlet** the Pied Oystercatcher pair nested with 2 eggs in late September. On the 21st of October one chick hatched and the other was heard chirping inside the egg. Both chicks were sighted on and off over the next month as the diligent parents took the little ones further up the creek and hid them amongst the mangroves. The strategy worked to protect the chicks and both survived to fledge in late November.

Further south at **Burrill Lake** only one pair of Pied Oystercatchers were confirmed nesting, on the sand island at the lake entrance. Nesting Pieds have been monitored in past seasons in the reed area behind the bottle shop and on the south-western side of the lake near Rackham Cres and 'pelican island'. Pieds were seen in these areas however the lake water level was very high and no nests were found. The pair at the entrance laid a 2 egg nest on the sand island which was abandoned a few weeks later, possibly due to high water levels inundating the eggs. The pair nested again,

A Pied Oystercatcher stands guard on the 'boat ramp' island in Lake Conjola while its partner incubates the eggs *Photo: J.Dunn*

The just laid first egg of the Narrawallee Inlet Pied Oystercatcher nest *Photo: J.Dunn*

but these eggs were also abandoned. Four Pieds were frequenting the area and nest scrapes were made but no more eggs were laid. Sadly in early November a Pied Oystercatcher was found dead on the bridge nearby, probably hit by a car.

At **Durras Lake Entrance** the resident pair nested in late September with three eggs. Two young chicks were sighted in early November, however the fate of the third egg is unknown. One chick was lost and the last one went on to fledge in December. Further north along the beach at **Calm Cove** another pair of Pied Oystercatchers nested with a two egg nest in November. It is unusual for Pieds to nest on the beach in the SC region (common on the north coast), however it is believed that the breeding pairs usual nesting grounds further in Durras Lake were probably flooded by high water levels. One chick was sighted in December and went on to fledge in January. The fate of the second egg is unknown.

Further south in Murramarang National Park at **Oaky Beach**, another unusual beach Pied nest was found. The nest was reported in mid December and quickly fenced off in preparation for the summer tourist influx at the nearby campground. However the nest was lost to avian predation. One egg disappeared and the second was found empty with a hole taken out of the side of the shell, which indicated an avian predator. Ravens were also heard at the site and may have been the culprits.

The resident Pied Oystercatchers at **Batemans Bay Marina** were hanging around their usual nesting site but no eggs were being laid. The local volunteer reported that the female appeared to have a sore leg and every time the male attempted to mate with her, she would fall over. Further investigations revealed that fishing line was wrapped around her right leg and the

Durras Pied Oystercatchers—almost fledgling on the left and parent on the right. *Photo: John Perkins*

leg was terribly swollen. Peter West from Seabird Rescue attempted to catch the injured Oystercatcher with custom built nets, however after days of attempted trapping he decided to give the pair a rest. Surprisingly the leg improved slightly and the pair were seen mating successfully. The local volunteer had reconstructed last seasons nesting site in the rockwall with fresh casuarina needles and amazingly two eggs were laid in the nest! Both chicks hatched out and went on to fledge in February.

Overall the SC had **15 Pied Oystercatcher breeding pairs incubating a total of 19 nests containing 39 eggs from which 19 chicks hatched. Twelve of these chicks definitely fledged** while a further two possibly fledged in Jervis Bay.

This season due to the persistent rainfall, as well as tidal and flooded lake conditions on the **FSC** many Pied Oystercatcher nests required sandbagging to raise them up above the threat of inundation. This intensive management method proved a successful strategy in the majority of cases and allowed incubation to continue to hatching. In some instances sandbags were also used by hatched chicks as refuges from stormy weather and king tides, thereby assisting with their further survival to fledging age.

The Batemans Bay Pied Oystercatcher with fishing line on her leg, the beautiful 2 egg nest and chick at almost fledging age *Photos: J.Dunn+Meryl Hannan*

This season on the FSC 24 breeding pair were monitored, with definite eggs or chicks present. Many more pairs in the region had established nesting territories and were observed defending these sites, however no eggs or chicks were ever observed and are therefore not included in the tally of breeding pairs for the region. Further unmated Pieds were observed throughout the season often forming small gatherings of up to 12 individuals at locations such as Wagonga Inlet, Wallaga Lake, Cuttagee Lake entrance, Gillards to Middle Beach, Greenglades and Wonboyn entrance.

Tuross Lake was an outstanding site for Pied Oystercatcher nesting this season with 5 breeding pair monitored. Amazingly nearly all their initial attempts to breed were successful at hatching at least one chick and overall 7 fledglings were confirmed for this lake system. This Tuross Lake contribution to the Pied Oystercatcher population equates to nearly half of the total fledglings for the region, which is very positive after numerous years of poorer breeding success at this site. The favoured nesting sites for four of these Pied pairs are the Tuross Lake entrance area sandspits, rocky exposed islands and dune system whilst a fifth pair nested further up the lake on 'Reedy Island'. It was a celebrated site by local volunteers who persisted in monitoring all 5 pairs and were very excited to sight the 2 fledglings at the 'Reedy Island' site in mid November. A further 5 fledglings were sighted around the lake entrance later in the season.

Brou Lake entrance remained closed for the start of the shorebird breeding season and persistent rainfall quickly raised the water level in the lake. Exposure to horrendous weather conditions claimed the first pair of Pied Oystercatcher hatchlings at the site, whilst the same rainfall event flooded an already sandbagged 2-egg nest further around the northern shoreline. As a result no further Pied Oystercatcher nesting was observed due to the lack of shoreline surrounding the flooded lake for nesting.

Wagonga Inlet was utilised by 2 Pied pairs for nesting with a 3rd pair establishing territory but only ever

Flagged Pied Oystercatcher at Coila Lake *Photo: J. Cornish*

Pied Oystercatcher on the nest *Photos: Robyn Kesby*

found to have nest scrapes, possibly due to their chosen site being repeatedly disturbed by roosting migratory waders at high tide. It is unknown what happened to the Lewis Island Pair's eggs but ravens are suspected of predating them. Whilst the second nest, located on a grassy island within the inlet required urgent sandbagging after laying as the pair had chosen a very low patch of sand to lay their eggs, despite ample 'high' ground directly behind the nest site (which was frustrating). Thankfully this nest went on to hatch and fledge 2 chicks.

It was fantastic to have a report of 2 fledglings sighted in late November at **Tilba Lake entrance**. Nesting attempts at this site have been repeatedly predated by foxes in previous seasons, so the undetected and elusive nesting attempt of the successful pair no doubt led to their final success in fledging these 2 chicks.

At **Wallaga Lake** an initial survey of the lake system by boat (assisted by the Batemans Marine Park Staff) on the 11th of November yielded a total of 18 adult Pied Oystercatchers. The Pieds were spread throughout the lake, with only 5 pair displaying territorial behaviour. Of these two pair were incubating eggs. One nest was lost to fox predation on the entrance sandspit. The second nest was found on Merrimans Island, though the outcome of this nest remains unknown.

A third confirmed nest within Wallaga Lake on the sand island just inside the lake entrance created quite a story this season. Initially this 2 egg nest was sandbagged due to the threat of king tides inundating the low lying site. The eggs successfully hatched out from their modified nest site around the 16th of December. However within days of hatching one chick ventured too close to a second Pied Oystercatcher pair trying to establish breeding territory on the same sand island

and was brutally attacked and killed by one aggressive adult. The surviving chick had to contend with king tides augmented by large waves entering the lake that topped the large sandbag stacks provided as refuge at high tide for the Pied's (these were up to 6 sandbags high!). The parents repeatedly swam their dependent chick between the mainland shoreline at high tide and back to the sand island at low tide. This attracted the attention of a few local residents who watch over the nesting Pied's and amazingly the little Pied chick proved quite a swimmer and survived all the crossings despite strong currents. This hardy little chick favoured the sandbag stacks as a protective roost site throughout the season and successfully fledged in late January, although remaining close to its parents for many further weeks.

One chick was successfully fledged from gorgeous **Bithry Inlet** in January. Whilst an initial attempt to nest by one pair at Nelsons Lagoon was lost to unknown factors a second nest was laid in early January within 1 metre of a busy pathway to the lagoon entrance. This single egg nest was fenced off and the pair appeared to be very tolerant of beachgoers passing nearby. But after a particularly busy January long weekend the egg was abandoned, as it appeared people disregarded the signs and fenced off area to access the beach, causing too much disturbance for the incubating parents.

It is unfortunate that again this season the **Murrah River Entrance** site was repeatedly frequented by foxes. Caging protected the eggs of 2 pair of Pied's but one nest was later abandoned in the cage due to disturbance from a fox attack, despite the predator not reaching the eggs. The second nest laid nearby was lost to unknown factors.

The Pied Oystercatcher nest at **Mogareka**, similar to many other Pied Oystercatcher nests this season, required raising on sandbags to avert the threat of inundation. Volunteers carefully raised the nest and then recreated the sand, seaweed and stick setting of the nest atop the sandbags. This nest amazingly survived a significant inundation event in late December and one egg successfully hatched with the second appearing to be infertile. The hatched chick proved very elusive though and was not sighted for a fortnight, as the site had large amounts of beach debris and driftwood deposited after the earlier flooding provided many opportunities to hide inconspicuously. This chick went on to later fledge from the area.

The **Bournda Lagoon** site was repeatedly used for nesting by one Pied pair with initial attempts quickly being predated by goannas, a later nesting attempt in December was more successful with 2 chicks hatching out during the busy Christmas holiday period. But we are unsure if these chicks fledged.

Overall **24 breeding pairs were monitored on the FSC, with 28 nests containing 49 eggs and hatching 23 chicks. The confirmation of 16 Pied Oystercatcher fledglings this season** is encouraging, whilst highlighting the importance of some local sites for threatened nesting shorebirds, such as Tuross Lake with 7 of these fledglings.

Along the **southern coastline of NSW a total of 39 breeding pairs laid 46 nests containing 89 eggs, hatching 42 chicks and fledging 28 of these chicks.**

The raised Pied Oystercatcher nest at Mogareka, a parent back incubating the eggs on the high rise nest and one of the almost fledged chicks (R) with its parent (L) *Photos: R.Kesby and L.Allen*

Sooty Oystercatchers

This season in the **SC**, the usual 7 offshore islands – Brush, Belowla, Grasshopper, Wasp, both Tollgates and Snapper - were surveyed for Sooty Oystercatcher nesting. However due to a combination of medical leave of the recovery coordinator and restrictions placed on island access during the critical breeding period, only one visit was made to each island in mid to late November. Disappointingly, these visits were too late in the season to obtain optimum breeding data as it appears many nests had already hatched or been lost. A further Sooty nest was reported from the mainland at Jervis Bay.

In mid October Holly Macken of Defence Australia at Beecroft Peninsula reported the usual pair of Sooty Oystercatchers at **Bhindijine/Honeymoon Bay** with one egg on the rocky point. However a week later the egg was gone.

On the 22nd of November a survey of **Brush Island** revealed 23 pairs of Sooty Oystercatchers, but only 8 pairs with nests containing 12 eggs. Three pairs had one eggs nests, and five pairs had two egg nests. However one of these had one egg rolled out and broken. Another pair was near a nest scrape with egg shell, but the parents gave no sign indicating chicks were around (ie. not vocal or territorial). Two of the Sooty pairs definitely had chicks and a third pair and a lone adult gave slight indications (only moderately vocal), that they may have chicks too, resulting in a chick estimation of between 2 and 8. This gives a total of 12 breeding pairs and another 11 pairs holding territory but with no current nests. Along with the 4 lone Sooties seen on the island, this brings the island total to 50 adult birds.

Also on the 22nd of November, nearby **Belowla Island** was surveyed and 14 pairs of Sooties were observed along with a group of 3 adults, bringing the island total up to 31 Sooty Oystercatchers. Despite the high number of pairs holding territories on the island, only one pair had a nest with two eggs and a second pair indicated they had chicks (estimated 1 or 2). The remaining 12 pairs were holding territories but there were no indications of current nesting, perhaps having already lost their nests.

Grasshopper Island was also surveyed on the 18th of November with 9 pairs occupying territories on the island. One pair had a nest with two eggs, another pair was near a nest with one abandoned egg and another pair was near a nest with one broken egg. This pair gave slight indications of a possible chick or chicks nearby as well. A further five pairs were very vocal indicating an estimated 5-11 chicks were also present on the island. The last pair was very quiet and gave no signs of nest or chick protection. The adult tally was 18 Sooty Oystercatchers.

On the same day nearby **Wasp Island** was surveyed and 8 pairs of Sooties were observed with 5 nests containing 10 eggs. One pair with a 1 egg nest, three pairs had 2 egg nests and one pair with a 3 egg nest. Two pairs were near some old nest scrapes and another pair was near an old nest with broken egg shell. An old egg in a nest was also found near a lone adult. None of the pairs indicated they had chicks. The adult tally for the island is 17 Sooties.

Sooty Oystercatcher breeding activity in the NSW South Coast & Far South Coast Regions — 2010/11 season

Site	Pairs	Eggs	Chicks	Fledglings	Main fate
Jervis Bay (Honeymoon Bay)	1	0	0	0	U
Brush Is	23	12	2-8	?	U
Belowla Is	14	2	1-2	?	U
Grasshopper Is	9	2	5-11	?	U
Wasp Is	8	10	0	?	U
Nth Tollgate Is	4	2	3-6	?	U
Sth Tollgate Is	4	1	2-5	?	U
Snapper Is	2	1	2-3	?	U
Montague Island	3	6	?	?	U
Bournda Is	1	2*	2*	2	Fl
Grand Total	**69**	**38**	**17-37**	**2**	

Abbreviations U(e/c) = unknown egg or chick loss Fl = fledged * = egg/chick number assumed from fledgling number

Further south, the **Tollgate Islands** were also surveyed on the 18th of November. On the northern island 4 pairs of Sooties occupied territories, one pair with a 2 egg nest and three pairs indicating chicks (3-5 chicks estimated). One chick about two weeks old was sighted. The adult tally for this island was 8 Sooty Oystercatchers. The southern island had 3 pairs present and one lone adult. One pair gave no signs of nests or chicks nearby, therefore considered not nesting. One pair had a one egg nest and indicated a chick was also in the vicinity, already hatched. A second pair indicated they also had 1 or 2 chicks. The lone adult was with 2 chicks, which were sighted. This brings the tally to between 3 and 5 chicks and 7 adults for the island.

The small **Snapper Island** nearby was also surveyed on the 18th of November with 2 pairs nesting on this island. One pair had a nest with one egg and one just hatched chick, while the other pair indicated that their chicks were in the area. This gives a total of 2 to 3 chicks and 4 adult Sooty Oystercatchers for the island. Unlike the rest of the offshore islands, which are NPWS estate, this island is crown land managed by the Land and Property Management Authority.

In total the **SCR** had 36 breeding pairs of Sooties on the islands and 1 on the mainland as well as 29 pairs that nesting was not observed for, although some made nest scrapes and possibly nested before or after our visit. There were also another 8 individual birds observed. There were 19 nests containing 31 eggs and between 15 and 35 chicks.

The high number of pairs holding territories but lack of associated active nests or chicks on Brush and Belowla Islands, as well as nest scrapes with broken egg shell indicate high levels of avian predation on these northern islands. Motion sensor cameras last season revealed a possible raven nest predator although the evidence was not conclusive, while this season a Swamp Harrier was caught on camera devouring a nest. Nest fates will be further investigated with the motion sensor cameras next season.

This season only incidental surveying was undertaken on the **FSC** on **Montague Island**. Three nests were recorded on the south island only with no chicks or fledglings confirmed.

On the mainland two fledglings were sighted accompanying their presumed parents. The first was on **Bournda Island** on the 23rd of January and it is presumed that this fledgling was from a nest on the island. It has been long suspected that Bournda Island has been home to a breeding pair of Sooties but no nest has ever been sighted.

The second fledgling was sighted on the 8th of December at **Horseshoe Bay**, Bermagui, with 2 adult birds. It is unknown where this fledgling may have hatched from, possibilities include along the rocky inaccessible headlands south of Bermagui and in Mimosa Rocks NP. Alternatively it could have flown from Montague Island.

On the **southern coastline of NSW a total of 69 pairs of Sooty Oystercatchers were observed on a single visit to the islands either holding breeding territory, incubating eggs or hiding chicks. In total 38 eggs were recorded, 17-37 chicks estimated and 2 fledglings confirmed.**

Sooty Oystercatcher on Brush Island and nest with a view on Wasp Island *Photos: Mike Jarman and J.Dunn*

Brush Island Sooty Oystercatcher on the nest (top) and then minutes later a Swamp Harrier devouring the eggs (bottom) *Photo: Scoutguard 550*

SPECIAL PROJECTS

Hooded Plover Banding

Finally after years of planning and preparation our beloved 'Hoodies' will be banded and flagged for individual identification. Jodie travelled to Victoria in May to be trained in the art of noose carpet trapping of the Hooded Plover by Victorian Researchers Mike Westin (Deakin University) and Grainne Maguire (Birds Australia). Tiny individual fishing line nooses are attached to a plastic grid which is then buried in the sand with the tiny leg hold nooses just visible above the surface. The 'hoodie' is herded across the trap and the leg becomes encircled by a noose (hopefully!). This entrapment only lasts a few second as the nearby operator quickly removes the bird from the trap thereby minimising stress to the bird.

Each 'Hoodie' will then be banded and flagged with a unique alphanumeric code on a black plastic flag engraved to white lettering, similar to the Victorian bird in the photo. Using binoculars and scopes we will be able to monitor the movements

Jodie learning to measure and band Hooded Plovers (L) and a flagged Victorian 'Hoodie' *Photos: Grainne Maguire*

and breeding of each individual Hooded Plover on the NSW south coast. Every volunteer will finally get to identify and know their local breeding pair! Most importantly chicks will be flagged just before fledging so we can monitor their survival rates and subsequent choice of nest sites and partners. Each bird will also be weighed and measured, and feather and blood samples will be taken for sexing and later genetic studies. All very interesting information to improve the management and recovery of our south coast 'Hoodie' population.

Fairy Tern – Friend or Foe?

Fifty years ago it was reported that the Little Tern and Fairy Tern were allopatric breeders, meaning that each species occupied a distinct breeding range along the coast of Australia (Hitchcock 1959). These two small terns are very similar in appearance and probably diverged from a common ancestor. Interestingly it has been hypothesised by Cox and Close (1976) that due to its more sedentary habit, the FT developed larger body size and lost the dark pigmentation of primary wing feathers (LT migrate to Asia therefore requiring lighter body for more efficient travel and dark pigmentation reduces wear of the wing feathers).

However with the expansion of the breeding range of the FT and LT over the last few decades, an area of overlap has developed in SE Australia where the two species may nest together. First came the 1970's reports of LT's at FT breeding colonies in SA and Tasmania. Subsequently, since the 1980's FT's have been observed nesting in southern NSW LT colonies, and even as far north as Botany Bay near Sydney.

Most significant is the actual mixed pairings of Fairy and Little Terns (FT/LT) nesting together, which produce hybrid offspring with mixed markings (see diagram). This interbreeding was first reported in SA by Cox and Close (1976) and then soon after at Tilba Lake on the FSC of NSW by Lindsay (1981). More recently an FT/LT mixed pairing was reported at Botany Bay by Ross, Egan and Priddell (1999).

Fairy Tern on the nest (top) and Little Tern (bottom) showing the difference in markings - eye stripe and bill tip *Photos: D.Mackay*

This FT incursion into NSW and the subsequent mixed pairings have become quite common along the south coast with a small FT colony forming close by the LT colony at Mogareka this season, and a mixed FT/LT pairing noticed at Lake Conjola the last few seasons has developed into 7 pure FT pairs or mixed FT/LT pairs nesting at the site this season.

It is hypothesized that this expansion of breeding range may result in mixed pairings along the leading edge where it is difficult to find a mate of the same species (eg. Botany Bay and Lake Conjola). While developing behind this leading edge will be separate pure breeding pairs as FT numbers build up (eg. Mogareka). The impacts of these mixed pairings on the genetic integrity of the Little and Fairy Tern's is unknown. Apparently hybrid offspring can go on to breed successfully, as Cox and Close observed in 1977, which may result in widespread genetic mixing and hybridisation of the two species.

The LT is listed as Endangered in NSW, however the FT is not listed at all due to its relatively recent incursion into our state. The FT was recently listed as Vulnerable in Australia and may need protection in NSW too? However the history of FT's in NSW needs further investigation along with the impacts of this incursion on the endangered LT genetic integrity.

Fox Den Fumigation

Early next breeding season in September, Steve Austin and his famous fox den detection dogs will be sniffing out fox dens all along the south coast. His skills were tested at Windang last season where the dogs successfully located 3 dens near the threatened Pied Oystercatcher family. These dens were then fumigated with Den Co Fume and no fox tracks were sighted for the remainder of the season. Both endangered Pied chicks went on to fledge successfully. Consequently we will be having the dogs back again and have extended the program to include 10 days in the SCR, 5 days on the FSC and another 4 days around Jervis Bay area for shorebird protection.

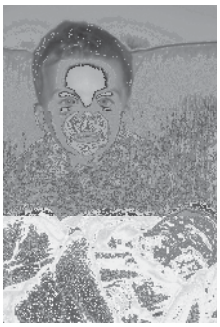
Local councils and crown lands along the south coast, together with Defence and Parks Australia at Jervis Bay have become involved in the program, resulting in a comprehensive cooperative program covering the areas surrounding most well known shorebird breeding sites. This safe and humane fox control method is also suitable for urban areas and consequently it will be used to target these foxes that we have previously been unable to remove. Let's hope the dogs are in good sniffing fitness and help us find lots of foxes along the coast to ensure the shorebirds have a good chance at hatching out their eggs and fledging their chicks next season!

Steve Austen with Gus and Katie ready to find fox dens *Photo: Kylie Mclelland*

Baby #2 on the Beach!

Ella Jade Harris

Amy and Kevin Harris
Born 03/0/10 in Moruya
Weighed 4.2 kg


Left: Amy + Ella only 4 days old
Right: Amy's first born Jordi + Ella

Thanks to all the Shorebird Volunteers

Thank- you for all your help and passion for protecting our threatened shorebirds.
We had yet another great season and hope to see you all again on the beach soon :)