

# Ash Island Saltmarsh and Shorebird Habitat Restoration

## Project Report 2012

### Introduction

Previous reports have focussed only on restoration works carried out at Milham Pond, Ash Island. The reporting function was based around the responsibilities of accounting for funding secured to take on the primary and secondary efforts of mangrove removal from Milham Pond to allow saltmarsh recruitment. Funding was mostly spent on contractor site works.

Additional to this work, volunteers have been busy carrying out similar restoration at three other locations on Ash Island in a section known as Area E. Specifically in Area E, the areas of interest are Swan Pond, Wader Pond and Wader West. Since all efforts over the last twelve months have been entirely volunteer-based it is proper that these sites should be included in an overall report.

The Ash Island Saltmarsh and Shorebird Habitat Restoration Project continues to be run as a partnership of several organisations with a common interest in estuary restoration. Each organisation has a vital role and the project is blessed by people passionate and willing to get involved, contribute knowledge and lend support.

Hunter Bird Observers Club (HBOC) takes responsibility for project design, works planning and implementation of site works and the volunteer effort. Kooragang Wetlands Rehabilitation Project (KWRP) is responsible for some of the administration since this project lies completely within the KWRP lease. NSW National Parks and Wildlife Service (NPWS) are the ultimate land managers and provide assistance to site works and project governance. Wetland Care Australia (WCA) has joined forces this year with additional funding specific to the project as well as other programs on Ash Island and the estuary in general.

### Licence to do work

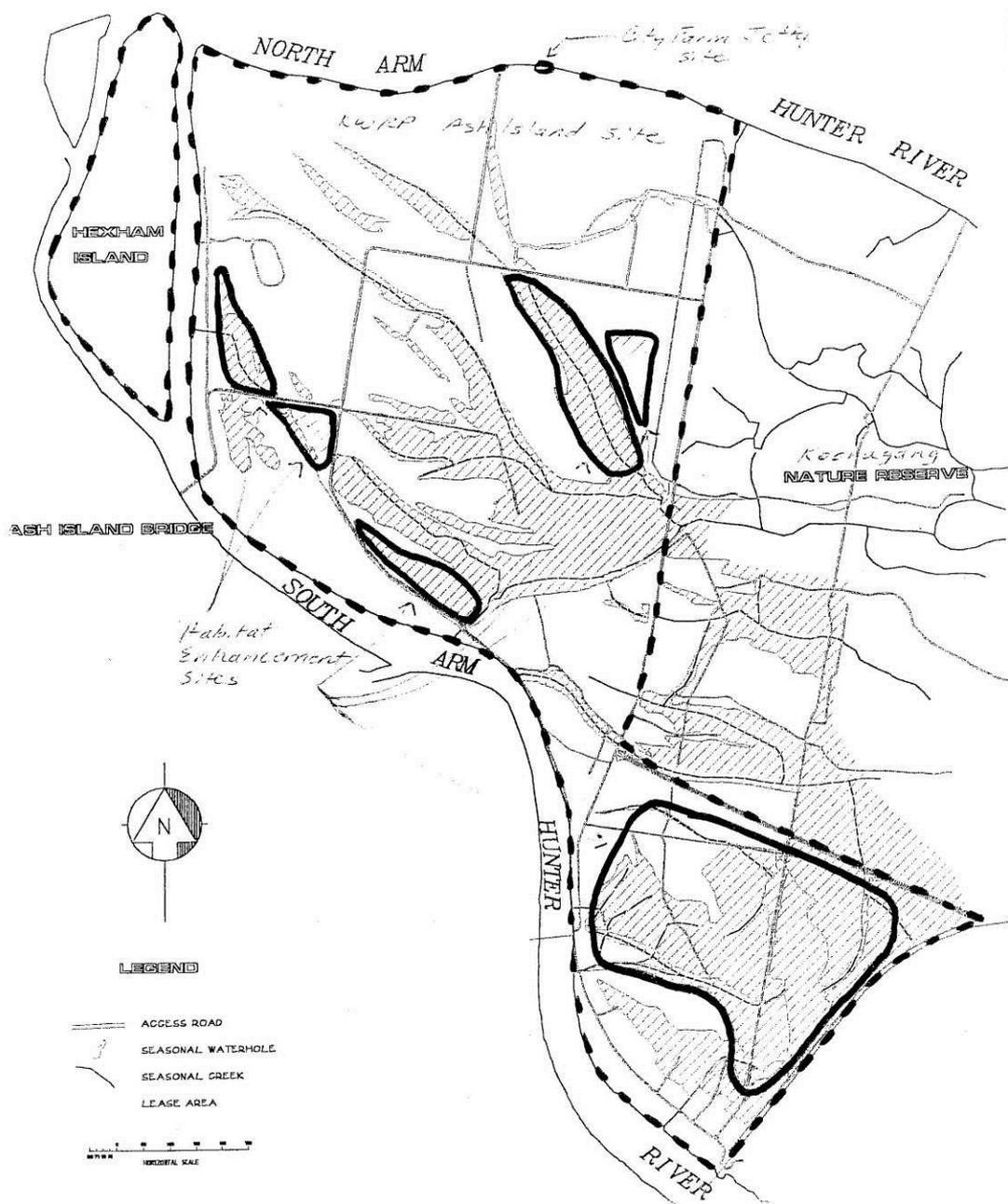
A permit, Number P09-2034, issued under Part 7 of the Fisheries Management Act 1994 was secured in March 2009 for "*removal and exclusion of mangroves from Milhams Pond*". The permit was issued by NSW Department of Primary Industries (DPI) and is valid until 30<sup>th</sup> December 2014. The permit allows the removal of mangroves only within the designated area of Milham Pond and Pheonix Flats.

A second permit, Number P10-2071, issued under Part 7 of the Fisheries Management Act 1994 was secured in November 2010 for "*mangrove removal for shorebird habitat at Ash Island*". The permit was issued by NSW Department of Industry and Investment (I&I) and is valid until **5<sup>th</sup> November 2013**. This permit is the current licence and allows for the removal of mangroves from several areas of Ash Island including shorebird habitat of interest at Milham Pond, Phoenix Flats, Swan Pond, Wader Pond and Wader West.

**A renewal of Permit P10-2071 is vital to continue our restoration works at Ash Island and should include all areas of current interest plus Teal Waters.**

### Work Areas

An attachment to Permit P10-2071 describes the areas of interest marked in bold outline.



Milham Pond and Phoenix Flats are located in the north, bounded by Milham Road and Ramsar Road. For the purposes of managing the site works, Milham Pond has been divided into several discrete work areas easily discerned by workers on the ground by using natural features of the landscape such as creeks and the odd redundant fence. For detailed descriptions of these areas refer to *Milham Pond Saltmarsh and Shorebird Habitat Restoration Project – 2010 Report*.

Area E sites are in the south bounded by Bell Frog Track, Hunter River and the export coal terminal railway lines. Swan Pond and Wader Pond are separated by Wagtail Way while Wader West is that area west of the power lines and east of Ramsar Road.

Three additional sites, Crabhole Flats, Schoolhouse Flats and Cobbans Marsh are also nominated but these enjoy little focus from HBOC volunteers.

### Site Works at Area E

The effort of removing mangrove seedlings from Swan Pond got off to a flyer on Sunday 29<sup>th</sup> January when all the area south of the mature mangroves was cleared.

The seedlings were popping out quite easily and three willing workers made good progress all day. The bulk of the seedlings were in the southern reaches near the two little pipe drains so it is likely that future work on Swan Pond will be more easily accomplished. A further two visits in February completed the entire Swan Pond area and a bit of start on Wader Pond; well in front of the previous year's effort.

The sterling work of the volunteers continued in March and just two more visits accounted for Wader Pond and Wader West. During 2011 we were confronted with the challenge of regaining the advantage after a two year lapse of activity at Swan and Wader Ponds and recorded high hours.

	Swan Pond	Wader & Wader West
2011 effort	75.5hrs	52.5hrs
2012 effort	39hrs	27.5hrs
	48.3% reduction	47.6% reduction

This year the effort required has just about halved; suffice to say we are very happy about it all.



But is it all in vain? We are very proud of our efforts at Swan Pond and it is a sickening thought that so much of this valuable wetland may be destroyed in the name of short-term economic gain. Plans to expand the coal export capacity of the Hunter threaten many aspects of the Hunter Estuary and the Lower Hunter Flood Plains.

### Site Works at Milham Pond

Mangrove seedling removal from Milham Pond commenced on 1<sup>st</sup> April and three fools enjoyed getting wet and muddy clearing the V2 area. Three further visits to Milham Pond in April were required to clear V1, V3 and Phoenix Flats. At this stage all the areas north of Midway Fence and east of the main stream running through Milham Pond had been treated. The challenge was then to complete the four felled areas (A, B, C and D) before essential work elsewhere in the estuary would take our focus away for the winter.

Site A was quickly cleared on the last Sunday in April with Site B and most of Site C knocked over early May. A sneak visit in July and two further visits in August were required to complete the treatment of Site C and cover all of Site D.

Site	2011		2012	
V1	4 hrs	8 hrs	7.5 hrs	13 hrs
V2	4 hrs		5.5 hrs	
V3	32 hrs	37 hrs	14 hrs	17 hrs
Phoenix Flat	5 hrs		3 hrs	
A	31.5 hrs	52.5 hrs	9 hrs	32.5 hrs
B			7 hrs	
C			3 hrs	
D			18 hrs	
Total	97.5 hrs		62.5 hrs	

At the start of this year's effort at Milham Pond we were getting a little worried about the amount of mangrove seedlings that had turned up but as we pressed on it seemed that maybe the density of seedlings was skewed towards the northern end. The initial stages of work in the V1 and V2 sections proved to be a challenge as we found lots and lots of seedlings hidden within the couch margins. Progress over the work area was slow at times as we faced a 60% increase in effort compared with the previous year.



Most of the seedlings gathered in the northern grassy margins.

By the end of the next two areas the effort required was back in our favour at about two thirds that of the previous experience (30hrs compared to 45hrs) and at completion of the whole Milham Pond system we had enjoyed a 36% decrease (62.5hrs compared to 97.5hrs). This was all very pleasing considering the heavy rate of seed production witnessed this year throughout the estuary.



Making good progress in Area A.

The slow bits are always within the grassy margins but the fun starts when we get out on the mud flats where areas clean up fairly quickly. Plenty of soft to very soft conditions under foot however require strenuous effort to just move around and the odd lost shoe doesn't help either.

While the total effort appears to be on the decrease, so too is the number of volunteers and this meant needing to make nearly double the site visits (9 rather than 5) compared to the previous year.

## Monitoring

To help monitor the effectiveness of our work and to document the recruitment of saltmarsh it was decided to establish three quadrats at the start of the project. These quadrats should remain for as long as we continue to restore this area and at the start of each year's effort a count of all the mangrove seedlings within each quadrat is made.

Mangrove Seedling Count				
Year	2009	2010	2011	2012
Quadrat A	6221	1994	905	405
Quadrat B		7508	85	145
Quadrat D		1769	36	300

The seedling recruitment counts for 2012 show an increase in Site B and D after initial dramatic decreases. Area A continues to show a decrease. The northern bias for seedlings is perhaps a product of the initial clearing of vegetation downstream and the subsequent breakdown of the timber providing little impediment to seeds floating in on the tide. A majority of seeds are finding their way further up stream and finally resting amongst the grassy margins. Of course we will be very interested to see what next year's count reveals.



Quadrat A (at left) only contained 405 mangrove seedlings while Quadrat D (at right) has over 70% saltmarsh coverage now.

A pleasing result is the establishment of saltmarsh in Quadrat D as salt couch *Sporobolus virginicus* expands its coverage from 55% last year to 70% this year and the streaked arrow grass *Triglochin striata* increasing from a mere line of plants along one edge to a 2.5% coverage in 2012. The streaked arrow grass is present over a 1m x 5m area now.



Later in the year a single salt couch plant was discovered giving it a go at the edge of the mud near Quadrat D; go little mate, you can do it!

It was also terrific to find a visible increase of saltmarsh over the ground at the south end of Area A adjacent to the confluence of the main drainage lines.



Compare the picture on the left, taken in April 2010, with what we found in April 2012 and it is easy to see the improvement of the saltmarsh coverage.

Additional to that we now have two species growing in this area. Back in 2010 we could only find Austral Seablite *Suaeda australis* but now we are finding for the first time a couple of small patches of Samphire *Sarcocornia quinqueflora* as well.

## Mangrove Propagule Exclusion Devices (MPEDs)

The Fisheries Permit allows for the installation of MPEDs, under strict conditions, to decrease the recruitment of mangrove seedlings by trapping seeds as they come on the tides. Each year we inspect our structures and make repairs to the mesh where necessary.



The first sign of mangrove seed invasion was noted in late August just as we were completing the removal of the previous season's seedlings. A site visit on 7<sup>th</sup> September was all it took to carry out running repairs and have everything ready for the new wave of seeds.

Earlier in the year (13<sup>th</sup> February) a site inspection was organised to discuss the design and installation of a proposed floating boom to capture and redirect mangrove seeds. The idea was to lay a deflector type boom across the main confluence of drainage lines at the downstream end of Milham Pond. It is hoped that seeds floating in on the tide will be deflected and deposited on the bank nearby. This area would then accumulate a large proportion of the total seed and be easily accounted for with an efficient brush-cutter treatment of the seedlings the following year.

The site inspection was attended by representatives from NPWS, WCA, I&I and HBOC. It was agreed that the purchase of the boom would be covered by WCA, installation by NPWS, on-going treatment of seedlings by HBOC volunteers and amendment to the Permit by I&I. As KWRP were the current holders of the Permit, all notifications would be facilitated by KWRP. What a team effort!



The boom was finally installed in early December and it will have very little influence on this season's mangrove seeds but at least we will have several months (till spring 2013) to watch its performance with various tides and make adjustments if we think it is necessary.

## **Acknowledgements**

With particular reference to this project I would like to acknowledge the support of Peggy Svoboda (KWRP), Peta Norris and Boyd Carney (NPWS), Scott Carter (I&I) and Louise Duff (WCA) whose combined contributions provide the support and governance required for this project to reach its potential.

To those that had all the fun wallowing in the mud, braving cold rain and putting in the back-breaking effort of pulling mangrove seedlings I reserve the last mention.



Thanks to both Boyd Carney and Peta Norris for lending a hand; your practical contribution and company on site is very much appreciated. To those wonderful HBOC volunteers, Juliana Ford, Jerry Bullent and Robert McDonald, your humble contributions are a great gift to shorebird habitat restoration.

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December 2012.

