

Ash Island Saltmarsh and Shorebird Habitat Restoration Project

Project Report 2016

Introduction

Ash Island is a significant component of the Hunter Wetlands National Park, located within the Hunter Estuary and mostly bounded by the North and South Arms of the Hunter River. Saltmarsh restoration and shorebird habitat restoration on Ash Island have been a focus for volunteers from Hunter Bird Observers Club (HBOC) since 2005 and together with wonderful support from other organisations have achieved great results.

The effort from volunteers these days continues to be mostly about the hand-removal of mangrove seedlings that have invaded designated areas of interest over the previous year.

Over the course of 2016, a total of 176 hours of volunteer contribution was made from a combination of HBOC members, Conservation Volunteers (CVA) and others with an interest in the estuary. This brings the aggregate since 2005 up to 1850 hours.

The value of this effort in terms of productive habitat for shorebirds is difficult to quantify of course, but when figured against contractor rates, it amounts to an in-kind value of over \$76,000. This is not an insignificant sum and continues to eclipse the initial funding of contractor works back in 2005 and again in 2009.



Figure 1. Morning light over Swan Pond.

Licence to do work

A permit, PN 14/333, issued by NSW Department of Primary Industry in December 2014 allows for mangrove removal over all the areas of interest within the Hunter Wetlands National Park. Particular areas of interest to HBOC on Ash Island include; Area E (Swan and Wader Ponds), Teal Waters, Milham Pond and Phoenix Flats.

Work under this permit was carried out in 2016. This permit is valid till 30th December 2017 so a renewal will be required to cover works beyond next year. The renewal process is embedded in the Hunter Wetlands National Park, Plan of Management.



Figure 2. The permit allows removal of invasive mangrove seedlings from designated areas.

Site Works at Area E

Mangrove seedling removal at Swan Pond and Wader Pond was carried out late January in near record time over just two visits. This was as predicted but the actual realisation is just a wonderful thing. The effort required in this area is completely sustainable.

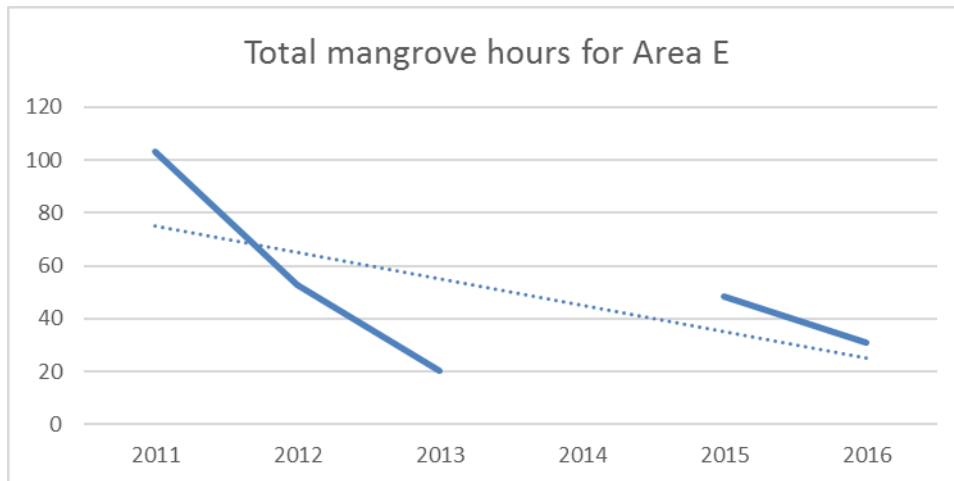


Figure 3. The effort for the last two years is reflecting the previous gains. Note that no work was carried out in 2014 and the sites temporarily regressed.

The first day of this work knocked over all of the Wader Pond areas including Wader West. With the muddy substrate saturated from recent rains combined with all the seedlings being less than one year old, the effort of pulling them up was minimal.

An enthusiastic team of Green Army participants helped out on the second day to make short work of Swan Pond. Working in small groups to begin then all pitching in at the last dense patch, this team was a joy to behold. The work included the area missed last year due to the construction work being carried out along the rail corridor.



Figure 4. Green Army having fun.



Figure 5. The south end of Swan Pond always provides the greatest challenge in Area E.



Figure 6. Apparently "not a problem" for Green Army.

Site Works at Milham Pond & Phoenix Flats

The first week of March provided favourable low tides for work to begin at Milham Pond and this period took care of Zones A, B, C and 60% of Zone D. Again, the wet weather was providing a nice soft substrate so pulling seedlings continued to be a rare joy in this area. This first week of work mimicked that of last year and at that level is completely sustainable for volunteers.

Two weeks later, the low tides were favourable once more and another great effort was completed. This time with help of some additional volunteers as well as a “gift” from NPWS that brought two paid contractors into play. This was very opportune as the focus was now on the heavy patches of seedlings that lay in Zone D, V2 and V3. The combined industry of these willing and able helpers meant that by the end of the week all of Zone D, V1 and V2 plus a solid start on V3 was completed.



Figure 7. Combination of volunteers and contractors hard at it near Neville's Nook.

It certainly was a challenge but the end was in sight.

The last three days of March saw the completion of all the Milham Pond and Phoenix Flats work and included a three-hour tidy-up walk, back over the entire site.

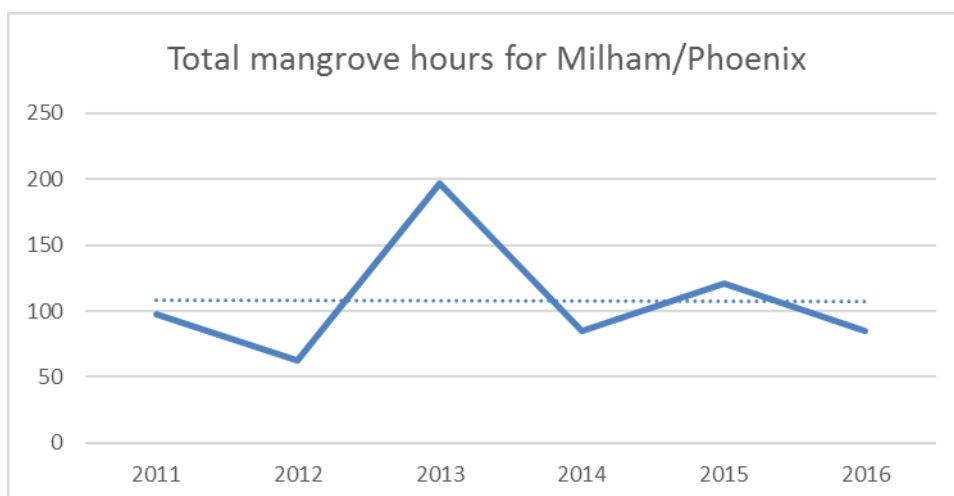


Figure 8. The last three years has seen the effort required hover about the 100 hour mark.

It has been noted over the last few years that a great proportion of new seedlings congregate along the grassy margins of the saltmarsh. Previously, while timber from the felled mature mangroves lay strewn about over the place, new-season seeds would, in part, be held up within this structure out on the muddier areas. This development has made life hard for volunteers as they deal with the hand-removal of these dense areas of seedlings. The use of a brush-cutter to deal with these dense patches will be trialled in the next season in an attempt to reduce the overall effort required.



Figure 9. Seedlings are densest within the grassy margins these days.

Monitoring at Milham Pond

Each year the recruitment of mangrove seedlings and saltmarsh vegetation is measured in an attempt to monitor the success of the project. Three established quadrats measuring 20m x 20m are cleared of mangrove seedlings and a count is recorded. This was carried out in January along with an inspection of the overall site.

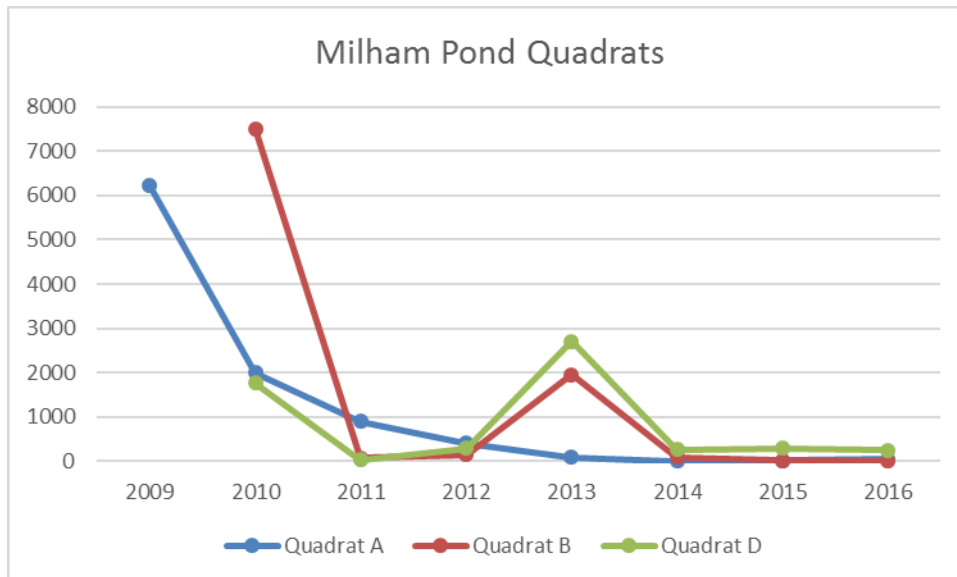


Figure 10. Number of seedling recruitment in each quadrat continues at low levels.

Since the spike in 2013 it appears that the various control measures designed to limit the number of mangrove seeds entering the Milham Pond system are having a positive effect. Casting an eye over the place it was obvious that generally the area resembled that of the previous year. The greatest aggregation of dense patches of seedlings lay between the Neville's Nook area and downstream to the confluence of the two major streams.

At the other end of the spectrum, measures of saltmarsh recruitment continue to increase slowly. Within the measuring area of Quadrat D, the establishment of *Triglochin striata* appears to have steadied at about 4% of the quadrat and the *Sporobolus virginicus* at about 94%. The remainder was made up of mangrove seedlings, mostly *Avicennia marina* var. *australasica* (Grey Mangrove) but also a lone *Aegiceras corniculatum* (River Mangrove).

Outside the quadrats, the spread of saltmarsh along all the edges of Milham Pond continues to increase and saltmarsh vegetation continues to fill out an area near the confluence of the major streams.



Figure 11. Twelve months after the primary clearing of mangroves, salt couch was barely covering this quadrat.



Figure 12. Salt couch has progressed over 9m beyond the quadrat in just 5 years.

Mangrove Propagule Exclusion Devices (MPEDs) at Milham Pond

To help protect the large investment made each year in removing mangrove seedlings, several MPEDs have been installed at key locations. The purpose of the MPEDs is to restrict the flow of mangrove seeds without affecting fish passage; this is a condition of the permits.

As soon as the first sign of mangrove seeds creeping in is noticed, the task of repairing the MPEDs is carried out. This is usually completed in early August but this year the appearance of the first trickle of seeds happened in July.



Figure 13. First invaders started appearing in July.

All the MPEDs were repaired with new mesh installed but it was evident that many seeds had already made it into the system. Seeds could be found up in the Phoenix Flats area and throughout Area V3 almost to Mid-way Fence.

The site inspection also found that the boom at the confluence still lay over on the bank untethered; as it was found much earlier in the year. Unfortunately, this situation failed to be addressed and the boom continues to lay out-of-action.

A subsequent inspection a week later showed that all the MPEDs remained sound and were trapping mangrove seeds.



Figure 14. New mesh installed and ready to trap the next wave of mangrove seeds.

Later in September, a second boom was installed to help counter the invasion of mangrove seeds. This additional boom was offered up for free by NPWS and was easily installed. The effectiveness of this extra boom is uncertain but hopefully, when combined with the original boom (next year when both are operational) its usefulness will be appreciated.



Figure 15. The second boom is helping to limit seeds entering along the side creek.

Acknowledgements

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.

Many thanks go to those people from NSW National Parks and Wildlife Service, Kooragang Wetlands Rehabilitation Project and Hunter Bird Observers Club.

The efforts of all those willing volunteers and workers from CVA Better Earth Teams, Green Army, Toolijooa and HBOC are most gratefully received and acknowledged.

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December 2016.



Figure 16. Life is just great down in the mud. This “site supervisor” is giving us the “thumbs up” on another job well done.