

NSW Planning, Industry & Environment

Sand, Nature's Defence

Wooli, a suitable case for treatment



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Wooli Background



Wooli CZMP

- Proposes to reduce, but not eliminate risk
- Focus on a Beach Nourishment Scheme
- Not a long-term protective measure
- Supported by complementary management actions
 - EASP
 - Development Controls
 - Beach and Dune Access Management



Wooli Beach Nourishment Scheme

- Hold the line strategy
- Two pronged approach
 - Sand Harvesting
 - Sand Back Bypassing
- Centred around obtaining **60,000m³** to maintain a **50-year** ARI erosion buffer
- Limitations (*e.g. sand availability, geomorphology, financial*) mean that realistically a lesser volume is likely to be achieved and maintained



Sand Harvesting

- Beach scraping, Beach skimming, NABE.....
- Traditionally viewed as a beach recovery assistance tool
- Effective dune volume building tool
- Utilise along littoral drift beaches to “harvest” bypassing sand to augment the natural dune buffer



The Wooli CCPA

- Oct 2010 - Coastal Communities Protection Alliance (Wooli) established
- Feb 2011 - CCPA Wooli Position Paper/CZMP Feedback
 - ASR Report
 - Wooli Dunecare reinigorated
- Oct 2011 - CPA Meetings with State Government / Ministers
- Dec 2011 - Protect Wooli Launched
- Mar 2012 - Automated Camera System Installed
- Beach survey program starts
- Aug 2013 - Sand Sourcing Study
- Jun 2015 - Revised CZMP Released/Feedback
- Oct 2017 - Joint Funding for Scraping
- Mar2019 - Beach scraping support



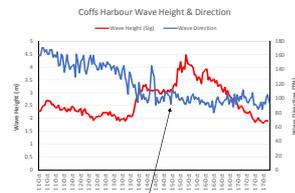
Sand Harvesting – October 2018



10 October 2018



10 October 2018



Proposed harvesting campaign kick-off



17 October 2018

Recovery – October 2018 to March 2019



20 November 2018



20 March 2019

Sand Harvesting – March 2019



- Commenced 28 March 2019
- 2 Week* Operation
- Equipment:
 - 2 x long arm excavators**
 - 1 x D6R Dozer
 - 1 x Posi track + spreader bar



I love the smell of diesel in the morning



- 800m harvest zone
- Nominal harvest depth 30cm
- Moved south ton
- Focus on the intertidal zone and berm cap
- SIMP and Crown Lands Approvals
- Native Title Officer onsite
- Fauna impact survey (supported by SIMP)





Sand (re)Harvesting – May 2019

- Harvesting completed 31 May
- Volume:
 - Fill 14340m³ / Cut 742m³
 - **Total 13598**
 - 15-17 m³/m
- Next Steps:
 - Installation of dune catch fencing
 - Dune revegetation
 - Continued survey (3 monthly) and monitoring

12 June 2019

Wooli - 6 months on



Fauna Impacts

- Ghost Crab as indicator species
- Very high levels of natural variability at all spatial and temporal scales which is consistent with other studies of ecological dynamics of beaches.
- Whilst nourishment buried all crab holes, recruitment was evident within 3 days* of scraping
- Population size was significantly greater than in the adjacent Control in one of the Impact sites within 84 days of nourishment (Smith, Tucker and Nimbs 2019)



Engagement with the Wooli CCPA

- Worked closely with CVC and OEH to progress sand harvesting
- Beach survey and monitoring
- Funding contributor
- Chief community communication body
- Installation of dune catch fencing
- Signage and access
- Assistance in dune replanting and continued watering
- Future project directions



What does the future hold?

- Continuation of "hold the line" strategy
- Learn from the outcomes of the current campaign and seek to build on this into the future
- Additional sand harvesting campaigns
- Consideration of the larger BNS actions including sand backpassing from Wooli North
- Enduring approvals for maintenance solutions?
- Is there a volumetric limit of sand we can place?



Key Takeaways

- Working with closely engaged coastal communities can deliver positive (win-win) outcomes for coastal management.
- Sand harvesting can represent relatively low-cost yet effective option for coastal management in environments where other options may be limited.
- Not a universal panacea and location needs suitable.
- Despite best efforts, we'll always be at the mercy of mother nature.
- Can be used amongst other management actions to complement a broader coastal management strategy.

Key Takeaways

- 2 excavator / 1 dozer set-up was effective, though considerations should be given to the types of each equipment to maximise efficiencies.
- Posi track was effective in profiling the beach at the end of each day to improve amenity.
- Impacts on fauna found to be minimal.
- March/April/May was found to be a good time to harvest for Wooli.

References/Further Reading

- Carley, J.T., Shand, T.D., Coghlan, I.R., Blacka, M.J., Cox, R.J., Littman, A., Fitzgibbon, B., McLean, G., Watson, P. Beach Scraping as a Coastal Management Option (2010). *Proceeding 19th NSW Coastal Conference, Batemans Bay, November 2010*
- Gordon, A. When did you last NABE a beach – beach scraping demystified for fun and profit (2016). *Proceedings 25th NSW Coastal Conference, Coffs Harbour, November 2016.*
- Smith S.D., Tucker, J., Nimbs, M. (2019). An assessment of biological impacts of beach scraping at Wooli Beach, northern NSW. *In Press*
- Wooli Coastal Zone Management Plan (2018)
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