

# Managing beach erosion at Marengo and Apollo Bay

Marengo sand nourishment – May and June 2017



Coastal erosion is a natural process where sand is moved away from the foreshore as a result of wind, waves and tides. It is preferable to allow these natural processes to occur without interference. When beach erosion threatens community infrastructure, such as walking paths and roads, coastal or infrastructure managers may consider a range of management options. Sand nourishment is one management option viewed as a 'soft engineering' approach that is an alternative to building hard structures to maintain a shoreline and protect nearby assets.

## The project

The Department of Environment, Land, Water and Planning (DELWP) and the Otway Coast Committee Inc., supported by Barwon Water, Colac Otway Shire and VicRoads, have undertaken sand nourishment at Mounts Bay, Marengo. Around 16,000m<sup>3</sup> was carted from nearby harvest areas - the Barham River Spit and Point Bunbury. This sand was used to create a new dune at the erosion site along Mounts Bay Beach. Sand was deposited along 600 metres of the beach and increased the dune width by 10 to 15 metres.

The creation of the dune incorporated a number of additional trials into the design, including:

- Spinifex harvested with sand at the Barham River Spit was 'punched' into the dune to see if the rhizomes would re-establish and help 'bind' the dune.

- Coconut husk 'coir' logs and jute matting was placed on the dune accompanied by planting of local coastal dune species.
- Sterile Rye Corn seed was scattered on the top of the dune to trial its effectiveness as a soil/ sand stabiliser.

Since the work was completed, winter swells have impacted the beach and eroded the new dune site. The dune is performing as expected, acting as a buffer to the previously eroded foreshore.

New sand has already been observed building up at harvest sites. Future monitoring will provide project partners with a better understanding of the rate that this is occurring.

In response to community requests, beach access was installed at Ocean Park Drive, however the dune is still not safe for hard structures. Access will remain closed at this site until it is safe to open. If conditions are suitable the Otway Coast Committee plan to re-establish beach access in early 2018. Access to Mounts Bay Beach can currently be found east and west of the new dune works. Signage will be installed to direct users to these locations.

## Monitoring

In order to better understand the effectiveness of sand nourishment at both the new dune and harvest site, data was collected before and after the works using a remotely piloted system (RPAS) or drone technology.

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This provides an accurate baseline measure for sand placed at Marengo and can be used to accurately assess the changes in sand volume and the dune's profile into the future.

## Consultant's report

A beach monitoring report was compiled by spatial and coastal geomorphic specialists which included data collected from the harvest and deposit sites before and after the works. The report measures sand losses and gains at different locations, excluding Point Bunbury.

The report is available on the Otway Coast Committee website: [www.otwaycoast.org.au](http://www.otwaycoast.org.au)

## Next steps

The sand nourishment works at Marengo and Apollo Bay are an interim measure to protect the foreshore while longer-term planning for the site continues. Partner agencies will shortly discuss a future funding model for sand nourishment at the site.

Monitoring will occur following winter swells. This will help improve our understanding of how sand has moved at the deposit site and whether sand eroded from the dune has moved onto the foreshore or been transported off-site. Monitoring will also provide insights into how the harvest site has responded and determine the cost effectiveness of sand nourishment as an ongoing treatment at the site.



Above: Sand nourishment site during winter swell.  
Left: Coconut husk 'coir' logs mid-winter.

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## Accessibility

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