

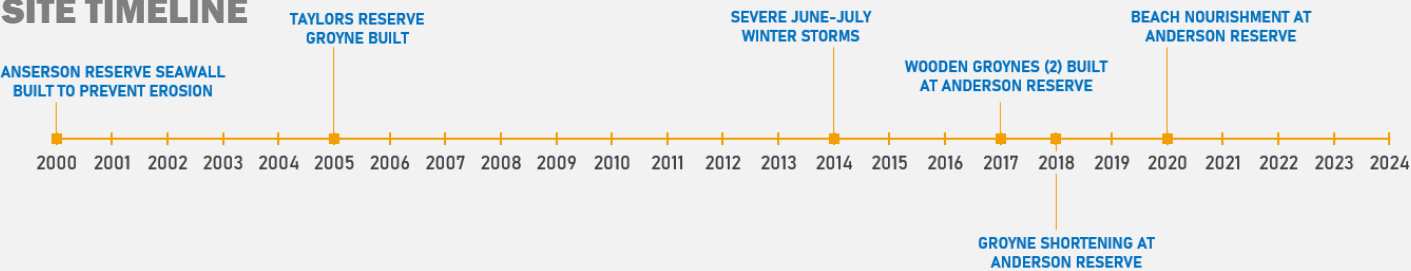
ANDERSON RESERVE GROYNES

Functionality Review



Photo credit: Eduardo Pombo

SITE TIMELINE



INTRODUCTION

BMT was engaged by Bellarine Bayside, in partnership with The Department of Energy, Environment and Climate Action (DEECA), in 2024 to review the functionality of the groynes built at Anderson Reserve in response to community concern that the groynes were having a negative impact on surrounding beaches.

The groynes at Anderson Reserve were built in 2017 with the aim of trapping sand and increase coastal resilience against shoreline erosion at Anderson Reserve. In 2020 5,000 m³ of sand was placed near the groynes to boost groyne efficiency and to further protect the shoreline either side of the groynes.

ARE THE GROYNES WORKING?

Groynes work by trapping sand moving along-shore and creating a wider beach, which acts as a buffer against storm erosion. Sand builds up in between the groynes and on the up-drift side of the groynes (direction the sand is coming from). There may be a corresponding reduction in beach sand on the down-drift side. At Anderson Reserve, the direction of along-shore transport changes frequently and sand may build up, or erode, on either side of the groynes in response to the prevailing wind and wave patterns.





The review found the design of the groynes (length, height, spacing, material) is considered appropriate for their intended function, and consistent with Victorian practice.

So far, the groynes have been effective (in combination with sand nourishment) at maintaining a beach in front of Anderson Reserve and preventing further damage to the seawall and erosion behind the seawall.

? HOW ARE THE GROYNES IMPACTING SURROUNDING BEACHES?

- Since the construction of the groynes, Aylmers Reserve beach to the south has suffered several episodes of erosion and very low beach width. Between 2017 and 2020, there were a few periods of southward along-shore movement of sand when the groynes trapped sand on the north side, reducing supply of sand to Aylmers beach resulting in a narrower beach. Conversely, there were also periods of northwards transport when the groynes trapped sand on the south side increasing the width of Aylmers beach.
- Since the nourishment in 2020 the groynes have been mostly buried and are having little impact on the longshore transport, and therefore little impact on Aylmers beach.
- Overall, the current fluctuations in beach width at Aylmers Reserve appear to be consistent with the long-term trends and fluctuations that occurred from before the groynes were constructed.
- There is no evidence that the groynes are the cause of sand moving offshore. They are much too short to be having this effect.
- The principal causes of erosion at Aylmers Reserve are most likely natural fluctuations in sand movement combined with sea level rise.
- Length of the groynes impacts the amount of sand they can trap. Reducing the length of the existing groynes will reduce their effectiveness as a protection structures for Anderson Reserve but have little benefit for Aylmers Reserve.



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MORE?**

For more information, please contact:

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