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New findings of tsunami deposits extend known geographic impact of late Holocene tsunami, southeast Australia

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An elevated and unusual coarse shelly sedimentary unit is found in a pocket embayment at Batemans Bay in SE Australia. The sheltered and elevated nature of the deposit along with the coarse sediments, diverse microfauna and large shelly macrofauna of mixed affinity suggest that the deposit is the result of high-energy deposition. The deposit is poorly constrained to approximately 1000 years old and the presence of rock encrusting oyster shells and large articulated bivalves in the coarse shelly unit is particularly noteworthy. Although this coast experiences frequent large storms with offshore wave heights exceeding 10 m it is unlikely that the shell-rich unit is the result of storm waves as they are significantly attenuated by the offshore bathymetry and rarely exceed 0.1 m at the site. The sedimentology also suggests that the depositional event must be capable of removing and transporting coarse sediments and heavy fauna from a variety of seaward environments and depositing them with little abrasion, something storm waves would not do. The deposit is likely to be the result of large-scale washover by tsunami in the late Holocene and may be coeval with the deposition of the sandsheets described elsewhere that extend over more than 130 km of the coast.