REPLY TO KENNEDY:
Historical evidence supports remarkable breaking wave heights

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Kennedy (1) argues that the removal of at least two suspicious readings for significant wave height from the Wave Rider Bellmullet Berth B data (https://www.marine.ie/Home/home) for the period 2011–2016 used to model the Annagh Head cliff top storm deposit (2) "will likely decrease significantly the size of the largest waves available to transport boulders" (1). However, as we state in our article (2), the maximum effective breaking wave heights generated for the model over the simulated 250-y period are considerably less than those recorded from Eagle Island, some 4.8 km to the north of Annagh Head (Table 1), where multiple events were recorded by observers between 1830 and March 31, 1988, when the light was automated.

Table 1. Minimum breaking wave heights estimated from historical accounts of waves or storms for Eagle Island, County Mayo

Date and reference	Minimum breaking wave height (m)
1830–1835 (during construction) (3)	59.7
January 17, 1836 (3)	59.7–67.0
1837 (4)	52.7–59.7
February 5–6, 1850 (3)	59.7–67.0
March 11, 1861 (3)	59.7–67.0
December 29, 1894 (3)	52.7–67.0
January 25, 1935 (3)	59.7–67.0
January 1987 (3)	59.7–67.0
February 1988 (3)	59.7–67.0

In each case, damage to the structure of the lighthouses, adjacent buildings, seawalls, or the actual light itself was reported.

1 Kennedy AB (2018) Reported extreme wave heights off Ireland are artifacts. *Proc Natl Acad Sci USA* 115:E1937–E1938.
2 Dewey JF, Ryan PD (2017) Storm, rogue wave, or tsunami origin for megaclast deposits in western Ireland and North Island, New Zealand? *Proc Natl Acad Sci USA* 114:E10639–E10647.
3 Commissioner for Irish Lights (CIL) (2017) Eagle Island Lighthouse. Available at www. irishlights.ie/tourism/our-lighthouses/eagle-island.aspx. Accessed December 31, 2017.
4 O'Brien L, Dudley JM, Dias F (2013) Extreme wave events in Ireland: 14,680 BP-2012. *Nat Hazards Earth Syst Sci* 13:625–648.

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