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8th July 2013.

For the attention of: Lindsy Booth-Huggins, Marine Management Organisation.

Dear Lindsy, Marine Aggregate Licence Application: Areas: 212, 240, 328B and 328C.

I write on behalf of Marinet, the Marine Network of Friends of the Earth and affiliated organisations/individuals, in the matter of the marine aggregate licence application for Areas: 212, 240, 328B and 328C, ref. MLA/2013/00119. This submission compliments that of Mike King, Great Yarmouth, who has also commented on behalf of Marinet.

The essence of this submission is that we believe the offshore/onshore wave model which supports this application is flawed in terms of its technical construction, and thus underestimates the intensity of the offshore/onshore wave regime and the consequential severity of the coastal erosion experienced along the adjacent coastline. Marine aggregate dredging increases wave height and thus the nature of the offshore/onshore wave regime, particularly during adverse weather conditions.

The licence application is supported by work done by HR Wallingford, 2011c. Marine Aggregate Regional Environmental Assessment: Wave Study (part of Appendix A to MAREA). Tech. Note DDR4472-04. HR Wallingford, Wallingford, 81p. You can download a copy of report DDR4472-04 (Appendix A of the MAREA) from the Marine Aggregate Regional Environmental Assessment Document Repository (<http://www.marine-aggregate-rea.info/documents>)

The burden of the argument is simple. If you deepen the water by lowering the sea bed, then you strengthen the "wave" of the waves offshore. In other words, the waves are larger and deeper. This in itself is probably acceptable, but it becomes a serious problem during times of strong winds, especially easterly or northerly winds which are driving the waves towards the coast. Strong winds, as everyone knows, increases the size of waves. Surfers enjoy the result, coastal inhabitants often fear it.

Thus if one knows the nature of the winds and their strength, one is able to create a wave model - in other words, one is able to predict the height, frequency and force of the waves arriving on the coast during times of severe weather. Essential information for predicting coastal erosion.

What we believe the aggregate companies have done is to fail to properly represent the nature of the wave regime.

This misrepresentation arises if you base your wave model on land-based meteorological data i.e. wind speeds recorded by coastguard stations and other facilities on land, or on marine data sourced

from locations other than the area in question. In reality, the winds at sea (which drive the wave model) are markedly more forceful than those on land. They have greater strength. Thus if you want to predict and calculate the nature of the wave regime, you must use sea-based meteorological data e.g. from offshore buoys and weather stations, and if you use marine data it must be sourced from the area in question, otherwise a similar understatement of wind speeds may occur.

In the past, the aggregate companies have not always done this. Some of their meteorological data has been land-based. We asked if the MAREA wave model similarly used land-based data rather than marine based data. We were not given an answer by the aggregate companies to this question.

The wave model for Areas: 212, 240, 328B and 328C is based on the MAREA wave model.

Accordingly, we ask the Marine Management Organisation to meticulously check the wave model being employed in this licence application and, in particular, to determine whether the wind speeds employed by the wave model are sourced from the offshore area in question (Areas 212, 240, 328 B and C). If they are not sourced from this specific area of the sea then the wave model's basis, in terms of essential data for its calculation, is flawed. Consequently assertions about the nature of coastal erosion likely to result from the continued operation of the marine aggregate dredging licence in these areas is probably similarly flawed too.

Such flaws, if established, are grounds for rejection of the licence application.

We would be interested to know the results of the MMO's expert examination of the wave model employed by this licence application.

Yours sincerely

S. D. Eades
On behalf of Marinet.