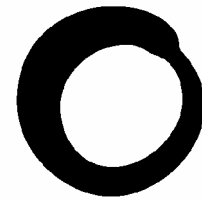




Marine Information Network
www.marinet.org.uk



**Friends of
the Earth**

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10th May 2006.

For the attention of: Mr. Nigel Bayliss, The Office of the Deputy Prime Minister,
Minerals & Waste Planning Division, Zone 4/B1,
Eland House, Bressenden Place, London SW1E 5DU.

Dear Mr. Bayliss, Aggregate Licence and ES Update : Areas 202 and 436.

We are writing to the Office of the Deputy Prime Minister in connection with the current application by Hanson Aggregates Marine Ltd (HAML) and their consultant, Marine Ecological Surveys Ltd (MES), for a new 5 year licence to dredge 1.5 million tonnes of aggregate (sand and gravel) from Area 202; and, the associated surrender of the licence for Area 436. We have a number of serious reservations about this licence application, and our purpose in writing is to address these to you through the Government View procedure established under Marine Minerals Guidance Note 1 (MMG1).

We understand that the licence to dredge aggregate from Areas 436 and 202 expired at the end of 2005, and that dredging is continuing in Area 202 under a temporary six months licence extension which runs until the end of June 2006; and, that HAML is not seeking a renewal of the licence for Area 436 and that this dredging area is being “surrendered” i.e. removed from the list of areas in which aggregate companies would wish to seek dredging licences.

We further understand that the current temporary licence for Area 202 is subject to an Environmental Statement Update requested of HAML by ODPM in order to determine whether a full Environmental Impact Assessment (as required by MMG1 when new licences are issued) is necessary. In other words, the current ES Update is a “scoping study” to determine the requirement for an EIA for the new licence application for Area 202. We also understand that a temporary licence has been issued and that a full EIA has not been required so far because the dredged tonnage being sought by the applicant from Area 202 constitutes part of the unused tonnage from the licence which expired at the end of 2005, and it has therefore been argued that the new licence is “an extension in time and not in tonnage” ref. ES Update.

We believe that the extraction of dredged material from Areas 436 and 202 in the previous 5 year licence (i.e. the licence which expired at the end of 2005) has had a serious and significant impact on the marine environment, and that therefore a new Environmental Impact Assessment is

required before Area 202 can be relicenced. The purpose of this present submission is to provide you with the facts and reasoning for this conclusion.

However, before we do so, may we advise you of the enclosed documents which will provide you with the substance of our discussion with the applicant's consultant, MES Ltd, and which will serve as important reference documents in order to substantiate our belief that evidence of serious adverse impact on the marine environment exists as a result of aggregate dredging in Areas 436 and 202. These documents are:

- Submission by Stephen Eades on behalf of MARINET to MES, dated 28th February 2006.
- Submission by Patrick Gowen on behalf of MARINET to MES, dated 22nd February 2006.
- Reply from MES to S. Eades, dated 19th April 2006.
- Reply from MES to P. Gowen, dated 19th April 2006.
- Letter from H. R. Wallingford to HAML, dated 7th April 2006.
- Letter from S. Eades on behalf of MARINET to MES, dated 20th April 2006.
- Reply from MES to S. Eades, dated 27th April 2006.
- Email from P. Gowen to MES concerning distance of Area 202 from shore, dated April 2006.
- Letter from MES to P. Gowen in reply to email, dated 3rd May 2006.

In addition to the above documents, we have of course referred to the ES Update prepared by MES Ltd. Please note, the ES Update relates to the EIA dated 1999. We were not supplied with a copy of the 1999 EIA when we received from MES a copy of the ES Update along with notification of the dates of the consultation period. We have subsequently, in a letter dated 22nd April 2006, requested from MES a copy of the 1999 EIA and MES have advised us that they have contacted the applicant, HAML, in order to make a copy of the 1999 EIA available to us. We are therefore not in possession of the 1999 EIA at the present time.

May we also note that the ES Update and its related public consultation was not advertised in the press, and that we only learnt of this public consultation on the ES Update from a third party. We informed MES that we believed this failure to publicly advertise the ES Update consultation contravened MMG1, and MES has advised us that the Office of the Deputy Prime Minister informed MES that no public advertisement of the ES Update and its consultation period was necessary.

Accordingly, we query whether this failure to publicly advertise the ES Update and the consultation period relating to the licence application for Area 202 is a failure of duty by the Office of the Deputy Prime Minister under EIA Regulations and MMG1.

Evidence of Serious Adverse Impact:

We note that dredging in the previous 5 year period has been split between Area 436 (1.3 million tonnes dredged out of an allocation of 2.5 million tonnes) and Area 202 (0.9 million tonnes dredged out of an allocation of 2.5 million tonnes).

We note that Area 436 is now to be "surrendered", with its unused allocation 1.2 million tonnes no longer licensed. Whereas, relicensing is now being sought for Area 202 with its unused allocation of 1.6 million tonnes forming the basis of the new aggregate licence for 1.5 million tonnes over a 5 year period.

The key matters at issue here are:

1. The ES Update states that seabed levels in Area 436 have fallen in the dredging locations by around 3 metres, and in some cases by 5 metres, over the licence period expiring end 2005, and that the loss of sediment from the seabed in Areas 202 and 436 during the past five years is only 20% attributable to removal by dredgers. The ES Update states that this additional loss of sediment is due to “natural morphological processes”.
2. The ES Update states that the offshore sandbanks to the west of Area 436 have migrated westward (i.e. away from the dredging site), and that the offshore sandbanks to the north of Area 436 and Area 202 have migrated northwards (i.e. away from the dredging site). The ES Update maintains that this movement in the sandbanks is natural, and that their integrity remains unaffected by dredging in Areas 436 and 202.
3. The ES Update provides bathymetric data collected over the previous five year period and evidence in the change in profile of the offshore sandbanks, although the exact location of these profiles is not specified in the ES Update. The ES Update does not provide any data on the size and volume of the adjacent offshore sandbanks (i.e. whether their mass has grown, diminished or remained the same during the previous five years), nor does it provide a wave model to demonstrate whether the wave regime in the vicinity of the offshore sandbanks and the coastal area has changed or remained the same, nor does it provide a plume study. As a consequence, assessments of cumulative impact (in combination with other dredging sites nearby) is compromised.
4. The ES Update states that the benthic survey carried out in the 1999 EIA was of insufficient detail to enable comparisons to be drawn with the benthic survey undertaken for the ES Update. As the aggregate dredging licence for Area 202 extends back at least 20 years, it must therefore be assumed that the benthic surveys accompanying the original licence application (i.e. 20 years ago) were similarly deficient, if not more so. Additionally, the ES Update in its benthic impact appraisal makes no mention of the ecosystem-based approach to marine management and assessment, an approach now advocated and endorsed by Government (ref. DEFRA, Safeguarding Our Seas, 2002).

We have offered comments on all of these matters in our submissions to MES, and the accompanying documents will provide you with such detail. However do not want to enter into such detail here, but rather to provide you with a clear outline of where disagreement exists between us and the applicant over the severe and adverse nature of the impact of aggregate dredging in Areas 436 and 202, and thus why we believe a full EIA is required before the current licence application can be determined.

Area 436.

At issue here is the question of the condition in which Area 436 is being surrendered, and whether this condition has direct relevance to the determination of whether Area 202 should be relicenced.

We have observed that the ES Update does not provide evidence, as required by MMG1, that an adequate depth (normally at least 50cm) of suitable material has been left so as to provide a substrate for benthic recolonisation. Nor does the ES Update provide, as required by MMG1, evidence that dredging has left the seabed in Area 436 in a similar physical condition to that existing before dredging started thus facilitating benthic recovery.

The reply from MES, dated 19th April 2006, does not provide the data with regard to the final condition of Area 436 which we have recorded as being absent from the ES Update, and states that this issue is irrelevant to the question of the licence extension for Area 202.

We cannot accept this position. If the applicant cannot demonstrate that activity in the previous 5 years in Area 436 meets with the final condition requirements of MMG1 (as stated above), then the applicant is similarly giving notice that it can provide no assurance that the condition of Area 202, after a further 5 years dredging, will conform to the final condition requirements of MMG1.

Accordingly, we maintain our original recommendation in our submission of 28th February 2006 that **the licence extension application for Area 202 should not proceed until it has been determined by the applicant whether the physical condition of Area 436 is sufficient to meet the requirements of MMG1 relating to depth of the remaining sand and gravel; the leaving of the seabed in a condition similar to that at the commencement of the licence; and, the provision of an adequate programme of monitoring to determine the rate and nature of the recovery of the benthic community.**

Loss of Seabed.

The disclosure in the ES Update that the loss of sediment in Areas 436 and 202 (and principally in Area 436 because this is the site which has been most intensively dredged during the previous 5 year licence) is 4 times greater than can be accounted due to removal by dredging, is of great concern to us.

The ES Update states that this loss is due to “natural morphological processes”. This term is not defined in the ES Update. We asked for a definition in our submission of 28th February 2006. The reply dated 19th April from MES did not supply a definition, and referred us to the letter of 7th April written by H. R. Wallingford.

H. R. Wallingford state that their original Coastal Impact Study (presumably dated 1994, but not specified in their letter) envisaged a seabed lowering of 2.5 metres. This prediction was made on the basis that the extraction tonnage would be 14.2 million tonnes, whereas the actual extraction tonnage since the beginning of 2000 has been 2.2 million tonnes. Presumably the “natural morphological processes” pertaining at the time of the original Coastal Impact Study remain the same as those “natural morphological process” existing at the time of the current Coastal Impact Study. Accordingly, we find the statement that “natural morphological processes” explain the loss of sediment 4 times greater than can be accounted due to removal by dredging as unacceptable. Not only are these natural morphological processes still undefined in H. R. Wallingford’s letter of 7th April, but the nature of these process – if they are in fact the cause – appear to have changed in an unexplained manner.

We observe that if this pattern of sediment loss were to be replicated throughout the Great Yarmouth block of offshore aggregate dredging licences, then 80% of the potential aggregate resource in the areas being dredged would disappear before the industry has had a chance to remove it. Not only would this be disastrous for the marine environment and its benthic communities, but it would also be commercially disastrous for the aggregate companies.

Therefore, why has sediment 4 times greater in volume than that removed by dredging disappeared from Areas 436/202 in the previous 5 years ?

It seems essential to us that this question is clearly answered. Not just because it will help to determine whether Area 436 is being surrendered in accordance with the requirements of MMG1 – and thus whether Area 202 can be similarly surrendered in 5 years time – but also because this issue raises vital questions about the natural morphological processes governing the security of this important mineral resource, and also whether the predictions and data which underlie the Coastal Impact Study for the coast of East Anglia can be regarded as accurate and reliable.

We maintain that neither MES nor H. R. Wallingford have answered our concerns satisfactorily, and we maintain that our concerns are based on clear evidence that dredging in Areas 436 and 202 in the previous five year has had a serious adverse effect on the marine environment. Accordingly, we maintain our belief that an EIA is required and our recommendation **that this phenomenon of erosion of the seabed due to “natural morphological processes” be urgently studied and reported upon, and that no re-licensing of Area 202 should be permitted until this study has reported and it has been concluded that it safe to proceed with dredging, both in terms of coastal impact and impact on the marine benthos. In addition we recommend that this study must be undertaken with reference to other dredging sites in the Great Yarmouth block and their cumulative impact.**

Integrity of Offshore Sandbanks.

We have submitted substantial historical evidence to show that in the previous thirty to forty years (i.e. in the period since aggregate dredging offshore from Great Yarmouth commenced) the offshore sandbanks, which are vital to the coastal defences of East Anglia, have experienced substantial erosion. In our view this evidence is incontrovertible and neither the replies of MES, dated 19th April, nor that of H. R. Wallingford, dated 7th April, have sought to contradict this evidence. We therefore recommend to you that this evidence is factual, and should be taken into account in the determination of aggregate dredging licences offshore from Great Yarmouth.

We note that the neither the current Coastal Impact Study by H. R. Wallingford (we have not had sight of earlier dated Coastal Impact Studies by H. R. Wallingford for these same licence areas) nor the current ES Update prepared by MES make reference to, or seek to evaluate the significance of, this substantial erosion of the offshore sandbanks. We observe that this is a serious deficiency in the evidence currently presented to you by the applicant.

When offshore sandbanks are eroded (i.e. their crest is reduced and the extent of their volume is diminished) the offshore wave regime alters, and the force of the waves arriving on the beaches and coastline is intensified. The consequence is coastal erosion and the loss of sea defences.

Erosion of the East Anglian coast and its sea defences has accelerated in recent years, and is widely documented to be in excess of natural historical trends. There is therefore strong *a priori* evidence that offshore aggregate dredging is implicated in this erosion.

The aggregate companies, supported by their consultants, deny any connection between their activity and recent trends in coastal erosion along the coast of East Anglia. However, in respect of the current ES Update for Areas 436/202 and the Area 202 licence application, the following must be noted:

1. The ES Update records that the offshore sandbanks adjacent to Areas 436/202 are moving westward and northward (i.e. displaying signs of erosion), but H. R. Wallingford assert that this is “natural movement” and that profiles of these sandbanks (Appendix 6 of the ES Update) do not display erosive activity. However, as we recorded in our submission of 28th February to MES, the sandbank profiles referred to by H. R. Wallingford are not referenced to any specific location, and eight out of ten of these profiles display, upon a visual reading, evidence of erosion of the bank and toe of the sandbank which interfaces with the dredging site. We asked for further clarification of this evidence, but received none from MES in their reply of 19th April nor from H. R. Wallingford in their letter of 7th April.

2. In our consideration of this failure to respond by MES and H. R. Wallingford, we have further noted that the question of whether offshore sandbanks are or are not being eroded could be empirically verified by determining their volume (i.e. their volume of sand and thus their mass). Bathymetric data exists to enable such an exercise to be undertaken and completed fairly simply and at no undue cost. We note that no such measurement of the mass of the offshore sandbanks has been cited by H. R. Wallingford (and therefore presumably not undertaken). We note that this is a serious deficiency in their evidence. We note that such evidence could determine whether offshore sandbanks are historically growing, diminishing or remaining stable. We note that such evidence is essential evidence in the compilation of any meaningful wave model, and hence a Coastal Impact Study. We note that such evidence could validate or disprove H. R. Wallingford’s assertion (upon which the aggregate companies depend) that offshore aggregate dredging does not impact adversely on coastal morphological processes and sea defences; and, we note that H. R. Wallingford have clearly made no mention of such data in their own evidence and argument.

As a result, we maintain our firm advocacy of the scientific hypothesis that offshore aggregate dredging *is* having a serious adverse effect on coastal morphological processes and sea defences; and that Areas 436 and 202, being part of the Great Yarmouth block of licences, are contributing to this effect along the coast of East Anglia. Further, we submit that there is strong evidence for this scientific hypothesis which needs to be publicly examined via an EIA in respect of the Area 202 licence application, and that this scientific hypothesis has been wilfully dismissed and substantially unaddressed in the present ES Update.

Accordingly, we maintain our recommendation for an EIA on the basis that **the profiles of the offshore sandbanks adjacent to Areas 436 and 202 need further analysis. Specifically, we wish to see a clear explanation of why the erosive character of the seaward 1999 bank and toe profiles relative to the 2005 profiles - in eight out of ten instances - does not lead to the apparent logical conclusion that the integrity of the sandbanks is being damaged.**

Further, we seek to recommend additionally (following receipt of the replies from MES dated 19th April, and H. R. Wallingford dated 7th April) that **the volume and mass of the offshore sandbanks in the Great Yarmouth area should be analysed on a historical basis in order to determine whether they are growing, diminishing or remaining stable; and, that such data should be made available in the production of an up-to-date wave model for the East Anglian coast; and, that this aforementioned data should be available to an EIA prior to the determination of the current licence application in respect of Area 202.**

Impact on Benthic Community.

We believe that the impact of aggregate dredging on the benthic community, and the consequences that arise from this, is greater and more serious than stated in the ES Update.

We have raised these matters in our submission of 28th February 2006 to MES. Specifically,

- We have suggested the hypothesis that a reason for the loss of sediment from Areas 436 and 202 being 4 times greater than can be accounted for by dredging alone is due to the destruction by aggregate dredging of key biotopes, based on *Sabellaria spinulosa* (Ross Worm) and *Modiolus modiolus* (Horse Mussel), which would otherwise cover the seabed, bind the sediment, and thereby prevent its erosion by strong currents.
- The failure of the 1999 EIA (and one must assume earlier EIAs relating to Area 202) to adequately assess the nature of the benthic community and, specifically key biotopes based on *Sabellaria* and *Modiolus*, means that the true nature of the benthic community in these two sites, and the extent to which they have shielded the seabed against erosion, is unknown.

MES in their reply of 19th April 2006 has dismissed our assertions in this regard as being unfounded and demonstrably incorrect. MES argue that *Sabellaria* is tolerant of disturbance and sediment suspension (material discharged from the dredger); and, that *Modiolus* (which is known to be intolerant of disturbance and suspended sediment) does not occur on the sites.

MES also record in their ES Update (Benthic Ecology Monitoring Study, Emu Ltd 2004, ref section 4.28) “Both the current and baseline data highlighted the impoverished macrofauna at Area 436/202, compared to published data for other gravel assemblages off the south and east coasts of the UK, and this has been attributed to the naturally perturbed benthic environment, including mobile sand and sediment transport.”

In response, we wish to assert:

- The *Sabellaria* communities elsewhere in the seabed sediments seaward of the Great Yarmouth offshore sandbanks are notable and in good health (ref. station 19 to the north of Area 202 and the JNCC recorded community in Area 401/2). Accordingly, we contend that there is *a priori* evidence to believe that Areas 436 and 202 may have supported similar and juvenile/developing communities of *Sabellaria* prior to the commencement of dredging in Area 202 over 20 years ago, and that the recorded design failure of benthic studies accompanying EIAs from this historic period means that this benthic feature is “lost” (i.e. unrecorded). Moreover, given this potential loss and the failure to address the possibility of this loss, has given rise to a culture in the scientific community which regards this area (Areas 436 and 202) as “naturally impoverished”. We assert that this verdict is unwarranted, and largely unsubstantiated. Further, the clear possibility exists that continuous dredging in the area (allied to trawling) has prevented the regeneration of the *Sabellaria* community, thus accounting for its apparent absence for the dredging sites.

We believe it is essential that this species (*Sabellaria spinulosa*), which potentially qualifies as a habitat meriting protection under the EU Habitats Directive, is deserving of a far more rigorous assessment than it has been given in the ES Update and, apparently, in previous EIAs relating to Areas 436 and 202. Indeed, this failure to perform such an adequate assessment is clear evidence of the need for a full EIA at the present time on the grounds that historic dredging activity in Area 202 and 436 may, in clear probability, have damaged the

conservation status of this species in this locality and that, as a consequence, the true significance of this species remains unrecorded and inadequately assessed.

- MES has been highly dismissive of our assertion that *Modiolus* is/may be present in Areas 436 and 202. However, we should like to draw your attention to the following statement in the ES Update (Benthic Ecology Monitoring Study, Emu Ltd 2004, ref. section 4.25) : “Also included within this sample cluster was a relatively large number of juvenile mussels (*Mytilidae sp. juv*) recorded at sample station 2 (38 no.)” [Our note: station 2 is in Area 436, southern boundary] . “Newell at al (1998) suggested that mussel beds can consolidate gravel substrates and increase the biodiversity of bottom fauna as a result of greater substrate stability and the greater variety of micro-habitats available, compared to adjacent areas where mussel beds are absent. English Nature have been previously aware of the presence of a *Modiolus* (horse mussel) bed at station 2 and requested that this sample station be included during preliminary consultations relating to the implementation of benthic surveys at Cross Sands Area 436/202 (Emu Ltd 2000). The high richness and diversity values recorded at this station, compared to adjacent gravel areas, were confirmed by the current data and conformed with the findings of the baseline macrobenthic ecology study.”

We therefore assert that there is clear historic evidence of *Modiolus* at these sites, and that the current recorded presence of the mussel *Mytilus edulis* in Area 436 [Our note: in a part of Area 436 that has not been dredged] suggests that the biotope function mentioned above and provided by mussel species (namely : consolidation of gravel substrate, increased biodiversity of seabed fauna, greater substrate stability, and greater variety of micro-habitats) may well have characterised Areas 436 and 202 prior to the commencement of aggregate dredging, and that the design failure of earlier EIAs has been culpable in the absence of these facts from the historic scientific record.

Accordingly, given the vital biotope function of mussel species and the severe seabed erosion in Areas 436 and 202 beyond that which can be accounted for by dredging alone, we believe that there is strong *a priori* evidence that aggregate dredging is damaging the benthic community in this locality, and that this serious and significant matter needs to be examined in full by an EIA prior to the determination of the licence application for Area 202.

We also wish to draw to your attention the fact that the ES Update has failed to make any reference to the ecosystem-based approach to the management of marine resources in Area 202 (although this policy requirement is stated in Safeguarding Our Seas, DEFRA, 2002), and that the benthic study in the ES Update offers no assessment of the impact of dredging on meiofauna and microfauna in the locality, nor any evaluation of the abundance and security of meiofauna and microfauna in the food chain that is connected to the area’s fishery.

MES is highly dismissive in their response of 19th April to these specific matters, and assert that our comments made about the importance of meiofauna and microfauna in supporting “food chains” leading to fish is simply not supported by evidence or ecological scientists.

Whilst we accept that the exact role of meiofauna and microfauna in the ecological structure of the marine environment is still open to research and debate, we simply cannot accept the assertion that the role of meiofauna and microfauna in the structure of the food chain is irrelevant and of no consequence. For your reference, may we direct you to the following publication which substantiates our position: *A Review of the ecology of offshore sediments with particular reference to marine aggregate resources for beach nourishment in New South Wales*, published by New South Wales Government, Australia, July 2003, Dr. Nicole Hacking, ISBN 0734752806.

Conclusion:

It is our assertion, founded we believe on demonstrable fact, that aggregate dredging in Areas 436 and 202 has had a significant adverse effect on the marine environment.

It is also our assertion, founded we believe on demonstrable fact, that the ES Update prepared by the applicant and its consultants is seriously deficient in a number of important areas.

Most importantly, Area 436 is being surrendered in a poor physical and biological condition, the quantification of which is largely unreported and unrecorded in the ES Update. This is a significant matter with respect to the application to relicence Area 202. We note that Area 436 still has, in theory, 1.2 million tonnes of aggregate available for extraction from the previous licence, and yet the licence holder (HAML) is not seeking to relicence this extraction. Why is this the case, especially when such extraction of unused capacity is being sought from Area 202 ? We suspect that the answer is that this aggregate resource no longer exists in Area 436 and therefore is no longer available (Note: the ES Update records a loss of seabed sediment 4 times greater than can be attributed to dredging alone). The reason for this loss, as we have demonstrated, remains largely unexplained in the ES Update and subsequent statements by MES and H. R. Wallingford. This is a serious and significant matter, with potentially serious adverse consequences for the marine environment and its adjacent coastline. Moreover, it appears that the same pattern (loss of sediment 4 times greater than can be attributed to dredging alone) is likely to be repeated in Area 202 if the licence is reissued for a further five years. We regard this prospect as unacceptable, and strong evidence that dredging in Areas 436 and 202 has had and will have a significant and seriously adverse effect on the marine environment.

We believe that we have demonstrated these facts relating to significant adverse effects on the marine environment and the serious deficiencies of the ES Update in this letter to your Office.

Accordingly, it is our clear recommendation to your Office that aggregate dredging in Areas 436 and 202 has had a significant adverse impact on the marine environment. As a consequence, we assert that it is both essential and a requirement of Marine Minerals Guidance Note 1 that the current application by Hanson Aggregates Marine Ltd for a further 5 year licence to extract aggregate from Area 202 be determined only after an Environmental Impact Assessment which has examined in detail and with precision the deficiencies in the ES Update and the matters of concern recorded in this submission.

Yours sincerely

S. D. Eades
On behalf of
MARINET,
Friends of the Earth Local Groups.

