

**SUMMARY OF THE MEETING ON EVIDENCE REGARDING THE DISPOSAL OF DREDGED MATERIAL AT THE RAME HEAD DISPOSAL SITE: 22 JULY 2005 AT THE MARINE BIOLOGICAL ASSOCIATION**

**Introduction by the Chairperson Keith Hiscock (MBA)**

Keith commenced by outlining the purpose of the meeting, namely to present the scientific evidence and to explore gaps and future work. The majority of people had read the report.

**Keynote presentation by Stacey Faire (CEFAS)**

- Requirements for dredging and disposal and the history of the disposal site were outlined.
- Presentation focused on what Cefas understood to be the main local concerns; litter, biological status and PAHs
- The main conclusion was that the disposal of dredged material was not having an adverse effect on Whitsand Bay.

Questions	Answer
Why are there no litter transects to the NE of the disposal site?	There were litter transects hidden by part of table – slide of transects was shown
How did disposal influence turbidity?	Requested that the questions was put to one of the experts present in the poster session.
Are the conclusions of the report statistically valid and subject to peer review	Multivariate techniques using validity of comparisons of biological communities are undertaken routinely. Standard monitoring methods were used. The work is published in annual monitoring reports and reviewed using internationally recognised specialists within Cefas.

**Presentation by Debbie Snelling (NMA)**

- colonisation of *Scylla* is progressing at a good rate with ~70 species currently, anticipated to be nearer 100 by the end of the year.
- NMA are due to produce a report on colonisation at Scylla, which Cefas have agreed to review.
- evidence that levels of TBT in “Dead Men’s Finger’s” is above what might be expected at both the Scylla and James Eagan Layne wreck sites.
- Current meters on *Scylla* cannot be placed low enough to be of any use to determine whether sediment plumes as a result of dredging disposal are affecting *Scylla* and the locality. NMA and PML are working together to source and fit a logger. Unfortunately recent poor weather meant they were unable to deploy one.

Questions	Answers
Was the source of the TBT found in organisms on the wrecks known, and could it be a result of disposal activity?	TBT in animals removed from Scylla are likely to directly from the hull, as the antifouling paint was not removed. TBT found in similar amounts on the James Eagan Layne were more difficult

	to understand. Bill Langston commented that TBT was the legacy of years of use and a ubiquitous problem in the UK.
Were organisms removed from off the wreck as well as on the wreck for TBT analysis?	The reference site chosen was the James Eagan Layne. No organisms from the wider area were assessed for levels of TBT
To determine any impacts it may be beneficial to examine more sensitive species such as Gastropods and especially their imposex status.	Comments noted

### Presentation by Andrea Crump (MCS)

- Andrea commenced the presentation with the following points which the EA had asked her to present:
  1. Despite EA advice RAFT had gone ahead
  2. The source of high levels of cadmium and mercury is unknown
  3. The time-scale of the CEFAS study is too short
  4. The EA believes that the disposal site has reached its capacity
- The national and regional problem of beach litter was documented and results from a one-off survey of Portwrinkle beach in 2003 were shown - the nearest beach to Polhawn Cove.
- It was stated that the litter washing up into the cove originated from the disposal site, but this contradicts other evidence that fishing, tourism etc all have an impact.
- The issue of microplastics was introduced, particularly arising from the breakdown of larger items. The issue of where the fishing debris is coming from arose.

Questions	Answers
Suggestion was made that the condition of drifting/beached seaweed found at Polhawn Cove is consistent with it having been mashed through a dredger.	A grid to exclude debris is used as this type of material would foul pumps and cause damage to vessels. Observers of the dredging operation during RAFT were unable to see a grid. This could be due to the placement of the grid within the suction head. (Cmdr Antcliffe commented that RAFT was a capital project and any litter was removed from the hopper to skips and then to landfill. These practices had been undertaken since 1986 and receipts of material for landfill were available.) Keith Hiscock suggested that the dynamic nature of the sea at Polhawn cove could be responsible for shredding of the seaweed.

### Presentation by Roger Covey (EN)

- The principle reason for the designation of the SAC at Rame Head is the presence of the rare terrestrial plant Shoredock.
- There is no reason to suggest that the disposal operations are having an adverse effect on the Shoredock.
- No detailed assessment of the potential impacts of dredging/disposal on the cSAC within Plymouth Sound in the CEFAS report –
- The greatest potential for impact to the cSAC (Plymouth Sound) was from dredging as the cSAC was to the east of Rame Head. The desktop study undertaken for RAFT had determined that impacts were not significant and the potential sediment transport pathway was seaward. Combined with the fact that the designated feature in the bay was Shoredock (a terrestrial plant) meant that the EN had no concern regarding the impacts of the disposal activity on the SAC
- European Court of Justice ruling was highlighted – where a plan or project is only permitted when it is certain that it will not adversely affect the site.
- Any activity undertaken adjacent to an SAC or cSAC would have to be considered as within the designated area

**Scientific observations from the Plymouth marine science community (open forum)**

<b>Questions/Suggestions for additional Consideration</b>	<b>Answers</b>
The report was flawed due to an error regarding the actual positions of the active discharges. All the Chalets at Rame Head have mechanical drainage and not soak-aways. Due to the misplacement of a sewage outfall the entire report needs to be re-written- in the light of such incorrect information new conclusions should be drawn.	CEFAS quoted in the report that the information regarding the ‘outfall’ was unvalidated. The information was taken from a database used to assist with assessments on behalf of the EA and that this information was the best available at the time. The conclusions and findings of the report were not altered by the presence or otherwise of the outfalls.
The transport route for material entering Whitsand Bay can be from Plymouth Sound as well as from the disposal site. What attempts had been made to look at the suspended solids?	Fate of suspended solids is difficult to ascertain as they have a tendency to drop out – and the material in plot has lots of scatter. The use of PCBs as a marker was suggested. Cmdr Antcliffe pointed out that under RAFT a project by EMU using ADCP tracers was undertaken and was available on request. The results of this survey showed that disposal material moved with the tidal flow in a northwest/southeast direction. Cefas have a copy of this report.
Councillor Murray insisted that the conclusions of the report by scientists were coloured by their paymaster.	Nick Owens (CEO of PML) said that this was an unwarranted remark relating not only to CEFAS’s independence but of the whole scientific community.
Colin Breed then asked for the Terms of	John Maslin (Defra) replied that CEFAS

Reference for the report.	were briefed to look at all the evidence and given no lead as to what they could or could not do.
The whole sediment bioassays addressed acute toxicity and were not designed to identify sub-lethal effects.	PML believe that they may have 8 years of archived data that could be worked up to show sub-lethal effects over time.
Rubbish has been seen coming ashore at Haybrook Bay to the east of Plymouth Sound, concern was that this may have been a result of disposal at Rame Head.	SFI have confirmed from recent inspections that a grid is in use on dredging operations currently undertaken.

### Presentation by Dave Peake

- Focus on Polhawn Cove and Queener Point where footage of underwater debris was shown (first shown to Cefas in 2003).
- Photographic and video images of *Beggiatoa* mats. Silt has “strangled” the large seaweeds at Queener Point and left them to rot, forming bacterial mats (the size of “boxing rings”) seen from November to March each year.
- Reduction in underwater visibility from 25m to 5m over 40 years.
- The activity must be stopped - ‘NIMBYism’ was admitted.
- Bag of industrial debris was displayed which included aluminium off cuts and rubber piping amongst others.
- Very muddy bottle of water displayed, which was maintained to be evidence of spoil in the water column.
- Audience shown two student dissertations claimed to prove that sediments from the RAFT project end up in Polhawn Cove, and that high cadmium levels in mussels were related to disposal.

Questions/concerns	Answers
Was the macerated seaweed attached to the rocks or had the material been ripped from other places ending up in the bay rotting.	Video footage showed seaweed growing. Observation of video showed that there was no macerated seaweed or bacterial mats where the seaweed was growing.
Masses of pebbles, slate stones and broken shell shouldn't be there.	This sort of material is expected in a dynamic intertidal zone.
Paucity of spider crabs in the area, which was attributed to dredged material disposal.	Keith Hiscock stated that the paucity of spider crabs was probably the same along the whole coast.
Councillor Murray requested that Defra attend a public meeting to discuss socio-economic effects of disposal activity.	John Maslin (Defra) said that the Department would wish to take local views into account and that the Department would attend a meeting once they had reflected on the points raised at the meeting.
Was the site predominantly a dispersive dumpsite arising from waves and tidal currents or from periodic storm events?	Studies showed that tidal currents dispersed finer particulates; however at times of storm events material up to the size of gravel could be moved and large amounts of sand could be re-suspended.
The audience was reminded that the burial-at-sea site was just off the	Noted. This is no longer in use according to Defra's Marine Consent Environment

dumpsite.	Unit.
Is it likely that sources other than disposal were responsible for some of the levels of PAH seen? Work undertaken by PML had shown in their work that road run-off from tyres is a large contributor.	Cefas agree. Work investigating potential sources of PAH from many sources could be considered. Future work may be undertaken to 'fingerprint' PAH
Would the situation get better or worse if disposal was continued.	This is not a question that is easily answered. Continual monitoring however gives confidence that practices so far have indicated that there is no significant impact.
The precautionary principle must apply if you cannot say that something will get worse.	Present practices have been monitored and evaluated. Future work will depend on dredging requirements and outcomes may indeed change.

### **Presentation by Commander Ian Hugo (Queens Harbour Master)**

- The role of QHM is to protect life, property and business (or rather protection of business in line with public opinion) through application of current legislation.
- QHM has jurisdiction for the largest Naval base in Western Europe: the only base able to refit nuclear submarines within the UK, and has to ensure the continual functioning of Millbay international ferry port, Sutton Harbour and Cattewater.
- QHM involvement with a number of fora. These included role as chair of TecF (the Tamar estuary consultative Forum), PPMLC (Port of Plymouth Marine Liaison Committee) and PPSA (Port of Plymouth Sailing Association).
- QHM stated that dredging was only undertaken when essential, as it was expensive for everyone and in the interests of those responsible for it to be managed effectively.

<b>Questions</b>	<b>Answers</b>
Were any other options for dredging and disposal considered – would it be possible to use a larger barge to dispose of larger amounts less frequently further away?	The tools used were those that were available and a larger dredger would not be possible due to the size of the area to be dredged. However, he would consider all options. Consideration of alternative use is a requirement of a licence application and every licence is considered individually depending on the nature of the material to be disposed.
Under OSPAR requirements they didn't have to dispose to currently designated disposal sites: new ones may be created.	Noted
Is a dispersive site like Rame Head appropriate considering levels of contamination in the spoil?	Material to be disposed of at sea is analysed for contaminants and only material considered suitable is consented.

	Material considered to be of concern is disposed of to landfill.
What alternative sites were available and what would be the effects.	No alternative sites, if required, were locally available. A new site, if needed, would need to be designated away from fishermen, anglers and other users of the sea in an area presently pristine. The old disposal ground would remain unusable for fishing and recreation, as it is an old munitions site.
Have any Cefas staff dived off the site?	Not in a professional capacity.

**Questions/ suggestions for additional consideration.**

1. Further consideration of any alternative sites for “beneficial use” options and alternative sites for disposal.
2. Fishermen need to be consulted and additionally there should be more consultation with other local stakeholders.
3. More information was needed on circulation and sediment transport (data from two current meters were not enough) – deployment of instruments for real-time measurements and modelling should be considered.
4. *Beggiatoa* mats –their location and potential for a link with disposal operations should be investigated.
5. Organism Health – (PML have 8 years of archived microtome blocks with embryos that, “given funding” they could work up; another suggestion was to collect blood samples from mussels and to assess whole animal health).
6. Diver Surveys to assess *Beggiatoa* mats and litter inshore of the disposal site (links with Q4.).
7. Additional analogous reference sites such as Talland Bay to the west (suggested by Keith Hiscock) or Haybrook Bay to the east.
8. Further appraisal of background levels of contaminants and inputs from the wider area – i.e. what is coming down the Tamar into the Sound?
9. Potential for fingerprinting contaminants to determine their ultimate fate.
10. The conduct of further sub-lethal bioassays (this links with Q5).
11. To investigate source inputs to catchments and the potential sources for PAHs

**General Comments arising from the final discussion session**

<b>General Comments</b>	<b>Reply</b>
The report is ambiguous and gaps must be addressed. Although the conclusion that this is an environmentally acceptable impact, is not well supported and the report should be re-drafted.	There is no intention to re-write the report. Additional work may be undertaken and written up in its own right.
PML commented that no additional video information would add to what is already known. Field assessments will never provide a 100% answer Only modest further studies would be required.	Noted
Representative from Cornwall County Council suggested that the report was	Noted

based on a necessarily limited budget and as a society we have to be aware that there are constraints in place on any report like this.	
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