Town & Country Planning Act 1990 Section 77 Anglesey County Council Planning Application by Anglesey Boat Company Ltd.

Gallows Point Marina Report L6805/
X/00/513782

Appendix: Assessors Report by Dr Terry Holt (CMACS, University of Liverpool)

Contents

1. Introduction

1.1 I am Dr Terence James Holt. I have a degree in marine biology and a PhD from a thesis on aquaculture in the Irish Sea. I have a wide range of experience of marine environmental issues and of marine aquaculture, including mussels, from a number of different points of view: as an academic researcher in seaweed cultivation (three years); as technical director of a small seaweed aquaculture company (five years full time plus three years part time); and as a research fellow / environmental consultant (mainly marine, especially N Irish Sea) for the University of Liverpool (ten years).

1.2 My experience in marine aquaculture includes:

- Aquaculture regulatory issues, including seabed licensing, often in liaison with conservation agencies, fishermen, other aquaculture companies etc;
- Chemical analysis of water samples and product;
- Investigation of methods for including scallop and mussels on the seaweed cultivation systems, and creation of a mussel cultivation system in the Albert Dock system in Liverpool.

1.3 My experience in marine environmental research has involved numerous contracts for both developers and regulators/conservation agencies, including:

- Management of numerous surveys and assessments for: a major sewage treatment scheme, oil & gas exploration and production, cable and pipeline laying, marina development, (including marine water and sediment quality, marine ecology and bird surveys);
- Further investigation into the use of mussels to filter seawater in dock systems;
- Assessment of fishery management and environmental issues for a cockle fishery in South Wales;
- Intertidal surveys using JNCC Phase 1 and 2 methods;
- Several desk studies on sensitivity of marine communities to a wide variety of human and natural influences, including preparation of a report on `biogenic reefs' (including edible mussels and horse mussels) in relation to Special Areas for Conservation (SACS);
- Preparation of draft UK Biodiversity Action Plans for horse mussels *Modiolus* modiolus and *Sabellaria alveolata* (worm) reefs;
- Preparation of reports summarising state of knowledge of the marine environment of i) Cumbrian Coast and ii) Morecambe Bay.

2. Purpose and content of this report

2.1 I was appointed as an assessor to assist Mr Clive Cochrane, the planning inspector for the inquiry into the proposed marina development at Beaumaris. Whilst the remit was mainly to assess the evidence presented on marine ecology (including birds) and mussel cultivation, both of these would clearly be strongly influenced by any potential effects on hydrographic conditions or water quality. Some consideration of hydrographic and water quality issues is therefore presented first.

2.2 The assessment is based on the written evidence presented before and during the inquiry, the oral evidence presented during the first two days of the inquiry, and the site visit undertaken by myself and others on Friday 28th July.

3. Hydrography and water quality

Summary of the issues involved

3.1 Water movement, in the form of both currents and wave action, has important effects on water quality, and therefore on marine ecology. Changes to currents and wave action can potentially change the rate of dilution/dispersal of any inputs, the amount of sediment suspended from the seabottom and transported in the water, and the rate at which this sediment is deposited from the water onto the seabed (thus determining the degree to which the bottom is sandy or muddy, for example).

3.2 Clearly a large obstruction such as a marina has the potential to influence currents and wave action to a considerable degree. Recognising this, the original Environmental Statement (CD9) relied on a ‘worst case’ analysis based largely on qualitative assessment without computer modelling. This approach was criticised by a number of organisations, including Aspinwall in their review of the Environmental Statement (CD11). Subsequently a Delft 2 hydrographic model (a 2-dimensional computer model which predicts currents) was used to better assess likely changes (supplementary report to the Environmental Statement, CD 10).

3.3 Clearly both construction of the marina, which would involve large amounts of capital dredging, and operation of the marina, which would require a less precisely known amount and frequency of maintenance dredging, would cause increases in sediment loadings in the surrounding water. Again some concern has been expressed that sediment levels may damage mussel farming interests or marine ecology, especially in filter feeding organisms (which include mussels).

3.4 Also, concern has been mentioned by numerous parties over the potential for introduction of contaminants a) into the water from dredging activities and b) into water and sediments from marina operations. This report does not go into detail concerning all of the potential problems and mitigations but concentrates on those which have proven contentious, or elicited some discussion, during the inquiry.

3.5 All of the above issues are discussed below. Due to the complex relationship between marine organisms and water quality, these issues will receive further mention in the sections on marine ecology and mussel cultivation.

Suitability of the hydrographic model used in the EIA

3.6 The Delft 2 (2 dimensional) hydrographic model used to support some of the assessment of water quality implications is regarded as 'fit for purpose' for use in assessing dispersal of sewage effluent (in the Menai Strait area) by the Environment Agency (oral evidence by KC; CD9). It was also regarded as fit for purpose of describing anticipated changes in currents caused by the proposed marina development at Beaumaris by Hyder (CD9). It is quite a detailed model which contains a large number of grid cells in the relevant area, and has been validated (i.e. tested for the accuracy of its predictions against actual currents measured in the field) at Gallows Point and elsewhere within the Strait (CD9). The level of detail does not allow good prediction of relatively fine scale changes to currents and sediments in shallow areas especially to the south west of the proposed development (Appl to CD12). A more complex three dimensional model such as Delft 3 (taking into account the depth of the water in making predictions) would not significantly aid in this since the area involved is intertidal or very shallow.

3.7 Overall, the outputs are likely to be acceptable indications of the scale and nature of any future changes to currents and sediment loadings, with the possible exception of relatively minor changes which could take place on the intertidal areas to the south west of the proposed marina.

Currents, wave action and sediments

3.8 Changes to hydrography, especially currents, wave action and sediment loadings, have the potential to affect marine ecology and the relaid mussels. However, the conclusions from the modelling are that changes in currents are likely to be insignificant, especially adjacent to or within the SPA, to the north east (Beaumaris area), in the channel and in the 'deep hole'. These conclusions are supported by the Aspinwall review (CD12) and seem to be realistic. The model also suggests that there would be negligible changes to currents to the south west, but the possibility of some slight change is not discounted in discussion (CD 10). The review by M Elliot on behalf of Aspinwall (App l in CD 12) also suggests some possibility of this, which in combination with possible changes to wave action, would thus indicate possible changes to sedimentation patterns on the intertidal area to the south west of the development. The remaining intertidal area after development would be small, however, and the present intertidal ecology in that area is unremarkable - see below. Although concern has been expressed by a number of parties regarding possible changes to currents and sediments (e.g. SFCl; MF12; CCW final submission and others), and to the suitability of the model used (CCW final submission), no evidence that significant changes would be likely has been presented.

3.9 Modelling has not been used in respect of changes to wave action but the suggestion that changes to wave action would be relatively insignificant (CD9; CD10) is likely to be valid. The review of the modelling carried out by Mike Elliott on behalf of Aspinwall broadly agrees with this (Appl in CD12).

Sediment loading

Marina construction

3.10 The Menai Strait is known to be a naturally turbid environment, although less so than estuaries. Although the NWNWSFC have pointed out that the relatively light dredges used by the mussel farmers will disturb the sediment less than equipment such as beam trawls, the activities of mussel dredgers must, nevertheless, cause some sediment disturbance in their immediate locality. There is no information with which to compare levels of turbidity caused in this way with levels likely to be created during marina construction or operation, however.

3.11 There are clearly potential implications of construction activities, which could conceivably raise large amounts of suspended sediment. Figures provided in the ES (CD9) suggest that the maximum increase in suspended sediment loading would typically be of the order of 1 mg/l, except within the immediate environs of the dredging operation, and that this would normally be well within the 30% increase in suspended solids maximum required by the Shellfish Waters Directive and also by the Environment Agency (EA letter of 14f July 2000 to AWO of YMCC). However, as a precaution, adequate monitoring and mitigation measures are proposed in the draft section 106 agreement.

3.12 Overall there seems to be little cause for concern so long as the good practice and mitigation proposals are closely followed.

Marina operation

3.13 Concern has been noted that long term changes to current regime, wave action and sediment conditions due to the presence of the marina may cause long term changes to suspended sediment loadings in the Strait (e.g. by CCWI; SFC). No evidence of any likelihood of this has been presented, however. The hydrographic modelling carried out as part of the EIA suggests that any effects would be insignificant (CD 10).

Maintenance dredging operations

3.14 Dredging operations would undoubtedly be needed in the future but the likely frequency is not known for certain, although dredging every 2-3 years, involving probably 10% or less of the volume involved in marina construction, has been suggested (CD9; CD10). The sediment involved would be likely to be finer than that removed during construction, and it is not clear if this has been recognised; nevertheless, the assertion that sediment suspension should be less of an issue than during construction (CD9; CD 10) is reasonable. However, as for construction activities, adequate monitoring and mitigation should be provided via the (draft) section 106 agreement. As mentioned above, the Menai Strait is known to be a naturally turbid environment and the activities of mussel dredgers can only add to this in their immediate locality. Overall there seems to be little cause for concern so long as the good practice and mitigation proposals are closely followed.

Contaminants

Potential introduction of contaminants into the water from dredging activities

3.15 Analysis of the metal content of the sediment, including TBT (potentially a problem because of the proximity of the boatyard) has been carried out, and this revealed very low levels of all nine metals. The proposed mitigation measures (draft section 106 agreement) include a much wider suite of parameters, including many organic chemicals, to be analysed in the sediments which may be dredged, and a commitment to agree monitoring programmes and mitigation measures with CCW and the Environment Agency and to incorporate these as part of an Environmental Management Plan. Overall, there is no reason to expect any significant widespread problems related to introduction of contaminants into the water as a result of dredging activities.

Potential introduction of contaminants into water and sediments from marina operations

Sewage

3.16 The most widely raised issue in regard to potential water contamination has been that of bacteriological water quality. It is clearly an extremely important issue for the mussel farmers in particular, (e.g. MFL1) as acknowledged by Prof Muir's Proof of Evidence (ABC4). The recent history in this regard is of a gradual improvement in the Menai Strait which it is hoped will continue (MF 1.1; MF 1.3).

3.17 The main reason for contention is that, in order to have complete confidence that the operation of the marina would not result in a worsening of the bacteriological quality, or prevent any further improvement, strong adherence to rules on disposal of toilet waste is required of the marina users. The degree to which this is likely in practice has been contested, although little compelling evidence has been presented either way. NWNWSFC have stated that "we understand that in Conway Marina, 98% of boat owners use on-board toilets in preference to shore based facilities" (MF7), although it is not clear where this information came from, nor what proportion of these would be expected to empty their toilets into the sea locally. This figure would appear to contradict the statement produced by Camper and Nicholsons Marinas in a letter *(*2nd Nov 1989) in support of the original planning application for Conway Marina that "in practice few if any yachtsmen use their on board toilet when they have the opportunity to go ashore." However, use of on-board toilets in itself is, of course, not a problem so long as the waste is not discharged to sea.

3.18 Overall, the chances of significant bacteriological water quality problems being caused by the marina are probably small, but this is dependent on very strong emphasis being placed by the developers on ensuring compliance with rules on disposal of waste.

Antifouling waste

3.19 Copper is now the main antifouling ingredient with any real potential to cause serious ecological harm around new marinas, although it is probably true that small amounts of TBT are still used illegally on smaller boats (and it is still used on larger commercial boats). The most serious potential routes for introduction of antifouling contaminants into the sea are during removal of old paints and application of new ones. The statutory and guideline measures which are presently being used by ABC and are incorporated into design plans (CD10 section 8.5; draft section 106 agreement) should ensure no significant contamination problems occur in or around the proposed marina.

Other wastes

3.20 Proposals for dealing with potential contamination by oil and other wastes, in so far as the details are agreed with the Environment Agency as proposed in the draft section 106 agreement, appear to be adequate.

4. Ecology

Summary of the issues involved

4.1 The Menai Strait is widely recognised as an important conservation area for marine ecology and wildfowl/waders. There are intertidal SSSI's within a few km to the north east and south west of the site, but no significant impact on any of these has been suggested. Much closer to the proposed development is a large Special Protection Area (Traeth Lafan SPA), designated in response to the EU Birds Directive. The Traeth Lafan SPA, also designated as an SSSI, covers much of the sand and mud flats almost immediately to the east of the site (CD16) and comes within around 250 m of it at the nearest point. Additionally, the footprint of the marina falls within a proposed Marine Nature Reserve, and a possible marine Special Area for Conservation (SACs are the UK's main response to the EU Habitats Directive).

4.2 Marine ecological issues obviously include the value of the intertidal area lost as a direct result of the construction of the marina. Indirect effects on adjacent areas, both intertidal and subtidal, have also been identified as potential issues, both as a result of potential changes to the hydrographic regime, and as a result of potential introduction of contaminants to the water column from the marina. The likely nature and scale of these changes has already been considered above under hydrography and water quality. Here, consideration of the likely importance of these potential impacts is given in relation to intertidal and subtidal ecology.

4.3 In terms of bird interest, by far the most contentious issue has been potential effects on the SPA. It is worth noting that, in the case of a development which may have a significant effect on an SPA, an Appropriate Assessment is required to be carried out by the competent authority, even if the development itself is outside the SPA. CCW presented a comprehensive interpretation of the meaning and requirements of an Appropriate Assessment to the inquiry.

Intertidal ecology

4.4 Birds are considered separately.

4.5 Clearly the footprint of the marina would effectively destroy the present intertidal ecology. The present intertidal ecology appears to be unremarkable, being dominated by mussels on muddy mixed sediment over much of the area, and by common seaweed species on shingle, mixed sediments or rock higher up the shore (CD9; CD10; and site visit). It is also relatively unnatural since much of it has clearly been impacted regularly by the activities of the mussel industry, which deposits high densities of mussels onto the area and removes them the following year using dredges. The loss would, to some unquantifiable degree, be offset by some colonisation of the marina breakwaters, albeit by a rather different community.

4.6 The intertidal area to the southwest would presumably be slightly altered by becoming more sheltered. According to the hydrographic modelling changes would be slight, but it is in this location that the model appears to have the weakest predictive ability. Again, however, the existing intertidal ecology appears to be unremarkable (CD9; CD10), and some small changes are unlikely to be of great ecological significance in the context of the wider ecology.

4.7 CCW's proof of evidence stated that the development is unlikely to have a significant effect on the proposed Menai Strait Marine Nature Reserve or possible Menai Strait - Conway Bay Special Area of Conservation, (provided that the Environmental Statement is correct and appropriate conditions and safeguards are implemented) (CCW1; CCW3). This is somewhat contradicted by the final submissions on behalf of CCW, which indicate some `concerns' at the loss of the proposed marina site for the purposes of the Marine Nature Reserve or SAC, though giving no indication of the importance of this loss or degree of the concerns.

Subtidal ecology including the deep hole

4.8 There are two main elements of local subtidal ecology which are of particular importance in assessing potentially damaging changes. These are the sponge dominated 'faunal turf' community, which is nationally scarce and therefore clearly of strong conservation interest, and appears to be found widely in the Menai Strait; and the piddock (bivalve) community found burrowing in the clay in the `deep hole' (and a few other localities within the Straits). A nationally rare community, and therefore of strong conservation interest, the latter appears to be well represented here, particularly in the `deep hole', though restricted in extent (as these communities often are).

4.9 The hydrographic model has identified negligible risk of any significant changes to current/sediment regime in the subtidal area, including the deep hole. Furthermore, the piddock community and, to a lesser degree, the sponge dominated faunal turf community, are probably quite tolerant of such changes. It is therefore extremely unlikely that any significant damage would be done to these communities by the construction of the proposed marina.

4.10 CCW have stated that the development is unlikely to have a significant effect on the proposed Menai Strait Marine Nature Reserve or possible Menai Strait - Conway Bay Special Area of Conservation, (provided that the ES is correct and appropriate conditions and safeguards are implemented) (CCWI; CCW3), both of which include the area of the proposed marina.

Birds

4.11 There would undoubtedly be some impacts of the proposed development on a number of bird species, primarily oystercatcher, but also curlew, redshank and several gull species, at the site of the proposed marina, according to a number of parties. However, the supplementary ES concludes that the scale and significance of the impacts would be very low (CD10). CCW expressed reservations about the assumption in the supplementary ES that the adjacent areas, and Traeth Lafan SPA in particular, would be able to accommodate the relatively low numbers of birds displaced by the proposed development (CCW 1). Nevertheless, they stated that the proposed development was unlikely to have any significant impact on the wintering bird interest of the Traeth Lafan SPA. The RSPB based their objections to the scheme (IP14) solely around possible impact on the nearby Traeth Lafan SPA (see below), without mentioning impacts on intertidal birds at Gallows Point. Taken overall, the conclusion that the impacts at the Gallows Point area would be very low seems reasonable.

4.12 The Traeth Lafan SPA was designated on the basis of its wintering bird interest (oystercatcher and curlew) and for its populations of moulting great crested grebe in the summer. CCW have stated that the proposed development is unlikely to have a significant impact on the wintering bird interest of the Traeth Lafan SPA (CCW1), and this seems reasonable. However, they also state that it might have significant indirect effects on the late summer population of moulting great crested grebes (for which the SPA is designated), red breasted mergansers and goldeneye (CCW 1). RSPB (IP14) identified great crested grebes and red breasted mergansers as the two species most likely to be significantly adversely affected by the proposed development and based their objection around these.

4.13 As pointed out by the RSPB submission (IP14), the bird surveys carried out for the Environmental Statement appear to be limited to intertidal birds only. It is strongly argued by CCW (e.g. CCW1), RSPB (IP14) NNVNWSFC (SFC 1) and others that, despite the assessment of published information on moulting waterbirds, and great crested grebe in particular, which has been carried out (ABC3/3), an "appropriate assessment" has not been carried out in respect of the SPA by the competent authority (held by CCW to be YMCC in this case). I agree with this.

4.14 The existing information (largely summarised in ABC3/3 and Appendix 1 of CD10) strongly suggests that the numbers of great crested grebe present in the critical area / time (i.e. present as flightless moulting birds in the channel area off Gallows Point/Beaumaris in July - September) is a relatively small proportion of those present in the SPA. However, this is based largely on indicative information (i.e. no firm numbers) from the 1970's - no recent observations, or counts from any period, are given. Red breasted mergansers and goldeneye are not covered in any detail by ABC3/3. The assessment of the degree to which the grebes could be potentially affected by disturbance associated with the marina is conflicting (e.g. CCW 1 and ABC3/3), and needs to be clarified.

4.15 The draft mitigation measures (draft section 106 agreement, 4t' draft, 3/8/00) under Ecology 1(c) of the fourth schedule proposes monitoring of shore and waterbirds for a period of September - March for a minimum of one season. This would exclude the moulting period for great crested grebe (July - September), the species for which the most obvious concern has been raised. This is an omission which I believe should be rectified.

4.16 However, in ABC3/3 reference is made to an undertaking to provide certain funding for a research programme to identify the numbers, locations and disturbance effects of sailing on moulting birds in the eastern Menai Strait. This research would provide the basis for a more rigorous assessment and substantiation of the likely implications of sailing activities on these bird populations. This work should be carried out before, or as part of, the "appropriate assessment".

5. Mussel industry

Summary of the issues involved

5.1 The general area of the eastern Menai Strait is clearly of great importance to the mussel cultivation industry. This industry, virtually unique to the Menai Strait area, involves collection of young mussels from areas outside the Menai Strait, to be laid on suitable licensed areas, called lays, where they are ongrown. The system is reported to work much more efficiently if the young mussels are laid for a period intertidally and then for a further period subtidally. This is largely because the young mussels are highly susceptible to predation by crabs and starfish (SFCl; MFl). Laying them intertidally reduces the numbers eaten by marine creatures, but reduces the growth rates of the surviving mussels because there is less food available to them. After a period of up to a year or so in the intertidal, the young mussels will have grown larger, and developed thicker shells. At this point they are much more able to withstand attacks by predators, and can be transferred to the subtidal areas, where growth rates are better, with much higher survival rates than if they were to be transferred there directly.

5.2 It is agreed by all parties that the construction of the proposed marina would effectively remove all of the marina 'footprint' from the fishery completely. However, the relative importance of lay 4, a lay with a considerable intertidal portion, and therefore the relative effect on the value and viability of the industry, has been the source of some disagreement between the parties. The mussel farmers and NWNWSFC have consistently attached considerable importance to this lay, claiming there is relatively little suitable intertidal area available to them for ongrowing, and that therefore a large proportion of the industry is effectively dependant upon it (e.g. SFCl; SFC15; MFL1), whilst the expert witness on behalf of the developers considered the true importance was probably much lower (ABC4; ABC4.1). This is discussed below.

5.3 Mitigation measures have been proposed by ABC in order to counteract potential effects on the mussel cultivation , and these have also been the subject of conflicting opinions, as outlined below.

5.4 The likely direct and indirect effects of the construction of the marina on mussel cultivation are discussed below, along with proposed mitigation measures.

5.5 However, socio-economic importance of the mussel cultivation, and potential losses thereof, are not considered here, nor are business considerations such as the likely viability of the industry at a reduced scale. This is because such considerations fall outside the main expertise of the assessor.

Lay 4 - likely losses due to the proposed marina development

5.6 Professor Muir presented evidence (ABC4; ABC4.1; ABC4.2) regarding the relative importance of lay 4, in which he suggested that estimated losses of 13-16% (of a target output of 4000-5000 tons for the industry) were based on very generous assumptions about growth and production, and losses of up to 3% (elsewhere quoted as 2-5%) were realistic. However, this evidence is to some degree based on conjecture, due to a lack of hard facts available to him at the time about the production of mussels in Menai Strait. Further evidence in this regard was presented during the inquiry by the mussel farmers, including "figures presented in the response to Professor Muir by the mussel farming companies regarding request for data to confirm the economic worth to Area 4". Overall, it seems clear that the claims by the mussel farmers and NNVNWSFC that lay 4 is directly involved in a large proportion of the mussel production (possibly up to 40%; SFCI; 30 40%, SFC15) are well substantiated.

5.7 It is also clear that, since much of lay 4 would be lost directly beneath the footprint of the proposed marina, a very large proportion (probably of the order of 60%) of this production would undoubtedly be lost if the development were to go ahead. Furthermore, it is very difficult to assess the likely viability of the small remaining areas, and no clear attempt to do so has been made by any of the parties.

Lay 4 - Mitigation

5.8 Options for 'mitigation' mainly take the form of suggestions that alternative sites to lay 4, either within or without the existing several order, would appear to be feasible options, plus the suggestion that flexibility of operation such as sharing of lays could be employed (ABC4; ABC4.1). However, it is acknowledged in ABC4.1 that complete confidence in these mitigative measures would not be possible without more information on the nursery operations involved, plus detailed surveys of alternative locations suggested.

5.9 After considering the large amount of evidence presented, I am not convinced that the suggested use of alternative areas is at all realistic. The suggestion has been strongly disputed by the mussel farmers themselves (MF1.1; MF1.2; SFC22 and others) and by the NWNWSFC (e.g. SFC7). A common-sense consideration strongly suggests that this would be difficult: the environmental conditions required for an intertidal mussel lay towork effectively seem to be reasonably specific and not easily predictable, and testing, requiring at least one year and preferably more, is required before one can be sure that an area would be productive; good water quality is also essential from a bacteriological point of view; the Menai Strait and surrounding areas are relatively small with a relatively heavy usage from a variety of perspectives (fishing, mooring, navigation, leisure, aquaculture, nature conservation etc), and there is a large proportion which is already designated, or proposed for designation, under some sort of conservation initiative (AONB; SSSI; SAC; SPA; MNR) (which, although not necessarily completely precluding mussel laying, would at the very least make the process of obtaining a several order long and difficult). Moreover, in practice, it has proven, and continues to prove,

extremely difficult to get areas designated under several orders, despite many years of trying by Mr Wilson in Morecambe Bay, for example (MF1.1; MF1.2).

5.10 The Sea Fisheries Committee seem to consider that the existing several areas are being used more or less to their full capacity, because they have suggested that the presently estimated sustainable production is roughly 4000-5000 tonnes per annum, which in broad terms is what has been averaged in recent years (SFC1; SFC6; SFC8). Flexibility in use, such as sharing of lays, is unlikely to be able to make up for the loss of the majority of the productive intertidal area of lay 4. Furthermore, a large scale attempt by Mr Wilson to grow-on seed mussels directly on to the subtidal, missing out the intertidal stage, was very unsuccessful (MF1.1).

5.11 NWNWSFC have acknowledged that the sustainable 'carrying capacity' of the several order area may eventually prove to be more than presently estimated (SFC7), and it is hoped that the 'LINK' project (MFl) will help to clarify this. However, even if it could be demonstrated that the sustainable production of the Menai Strait several order area was, in fact, higher than 4000-5000 tonnes per annum, the lay 4 production would still represent a large proportion of that yield.

5.12 In my opinion the suggestions of mitigation given in ABC4 must be discounted unless they can clearly be demonstrated to be viable options, which at present they are not.

Water quality issues in relation to mussel lays

5.13 Water quality is clearly important to mussel cultivation. However, the F'S has concluded that there is negligible risk of significant detrimental effects on water quality so long as good practice and mitigation measures as proposed in the ES and draft section 106 agreement are followed. This conclusion seems reasonable, although cannot be regarded as absolutely proven. The mussel farmers have stated that sedimentation plumes should not be problematic if construction is carried out over the winter (MF1.1), and it would be preferable if this were taken into account as far as is possible. This would apply also to maintenance dredging.