North Western IFCA

Technical, Scientific and Byelaws Sub-Committee: 21 June 2011

Strathmore Hotel, Marine Road East, Morecambe: 10.30 a.m.

AGENDA ITEM NO. 7

UPDATE ON SOUTHPORT COCKLE FISHERY

Purpose

1. **To inform members of the current situation of the cockle beds at Southport.**

2. **To provide members with background information on the previous trials of wet dredging conducted in the Ribble.**

3. **To provide members with information on the Conservation Features of the area.**

Recommendations

1. **The report be received**

2. **The sub-committee to discuss the topics covered and decide upon a future course of action**

3. **Officers to continue monitoring the cockle beds and growth rates over the summer months**

BACKGROUND

1. At the last TSB Committee meeting it was brought to the attention of the members that a substantial Cockle Fishery would be likely at Southport in autumn of 2011. It was suggested that the use of limited wet dredging be considered in suitable areas along with regular hand gathering. The Ribble Estuary is a designated Special Protection Area (SPA), RAMSAR site and a large proportion is designated as Sites of Special Scientific Interest (SSSI's). A meeting was convened with the local authority and other interested parties

CURRENT STATUS OF COCKLE BEDS AT SOUTHPORT

2. During April and May officers conducted surveys of the beds at Southport to improve the understanding of the size and population structure of the main beds. Surveys were conducted on 13th April and 18th and 19th May, figure 1 shows the combined survey results.

3. Two areas, Penfold South and Penfold North Area 1 have large amounts of 2010 cockle present. From visual observations made by Fishery Officers and supported by this survey, areas of the Penfold West have been lost and the peripheral areas of the northern beds have reduced. No 2011 spatfall was observed during these surveys.

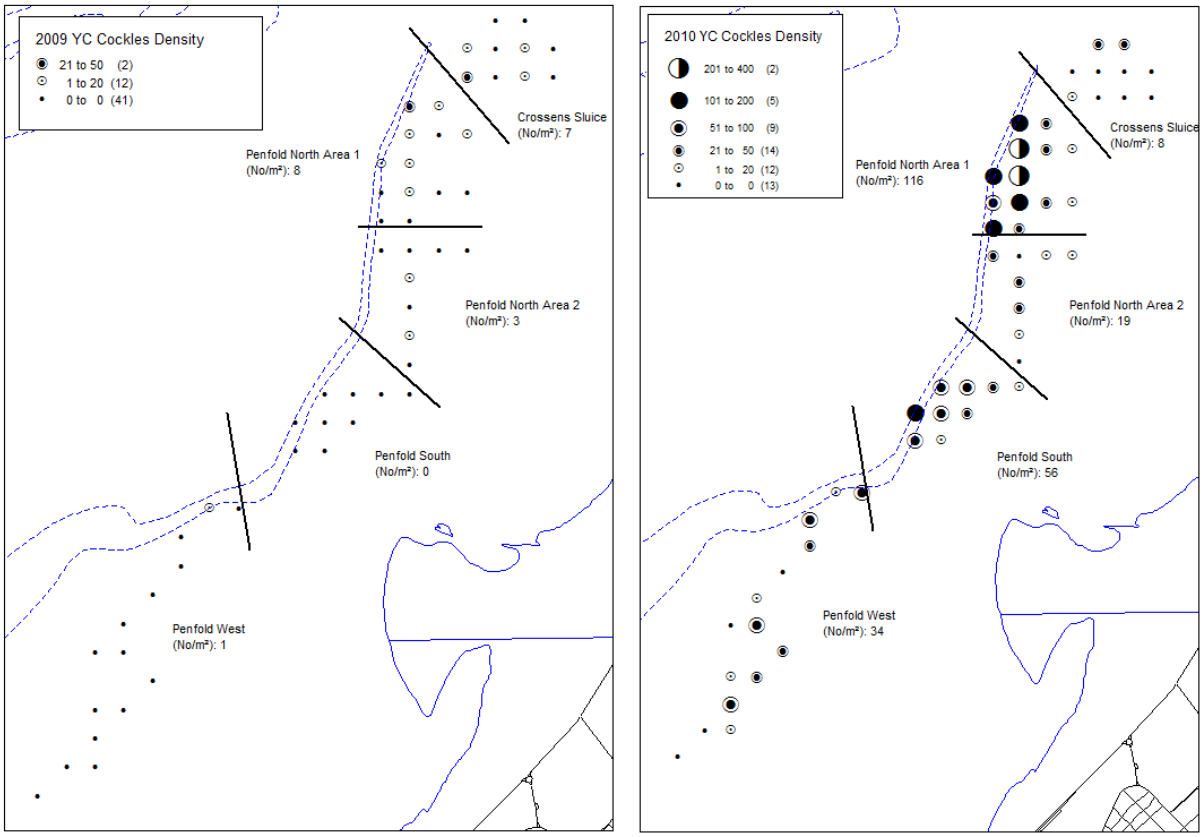

Figure 1. Cockle Density (no/m2) at survey points for year classes 2009 (Left) and 2010 (Right) Average density of cockle for designated bed sections for both year classes are labelled on both maps

4. The size of the 2010 cockle sampled was between 14-18mm with an average of 16.4mm from the sample.

5. No further work has been undertaken on Georges Brow due to access issues but is a priority for the following months. Further survey work using larger quadrats and monitoring the growth of the cockles is planned.

6. A more detailed Fishery Officer's report of the various parts of the Ribble cockle stocks with management options is at Annex C.

CONSERVATION FEATURES AND DESIGNATED BOUNDARIES

7. The Ribble Estuary is a heavily designated area and the majority of the main cockle beds fall within all designations as shown in Figure 2. Prior to the previous wet dredging fishery in the Penfold Channel discussions with Natural England were undertaken and an impact assessment was conducted.

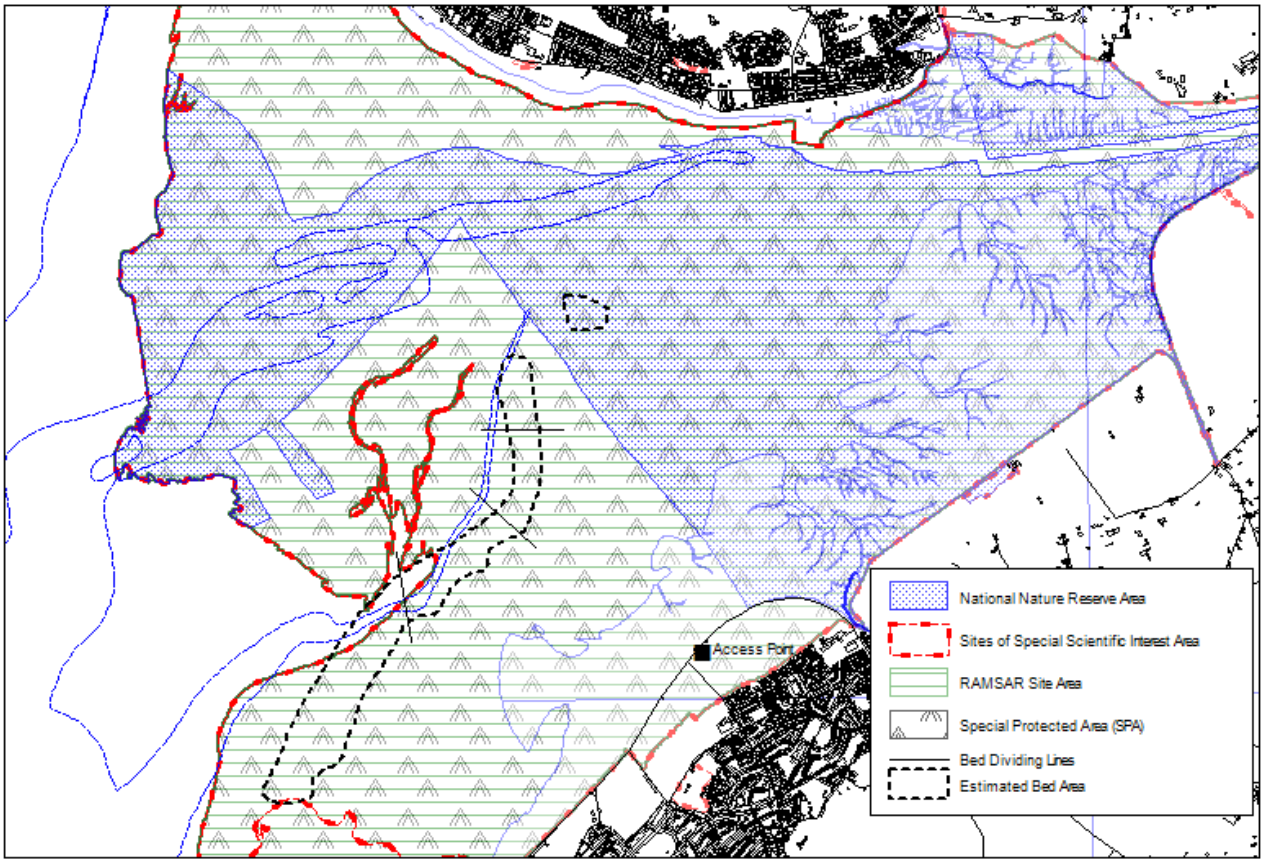

Figure 2. The extent of the Ribble Estuary Conservation Designation and proximity to the estimated extent of the Penfold and Crossens Cockle Beds.

8. The area which is currently used as the access point onto these beds is designated as a SSSI, SPA and RAMSAR site. A list of the species covered under these designations is identified at Annex A.

9. An up to date impact assessment of the fishery is being undertaken, to assess the potential effect upon the current conservation features present. Further information on bird utilization of the access point area and within the immediate vicinity of the cockle beds is being sought.

10. The initial assessment raised concerns with three bird species which feed on cockles: Knot, Black Tailed Godwit and Oystercatchers. It is understood that Oystercatchers utilize cockles above the minimum landing size and Knot feed on smaller cockles.

11. Several other species are known to feed on bivalves and other invertebrates from sand and mud flats. Damage to other substrate species through hand gathering and wet dredging may need to be considered.

REVIEW OF PREVIOUS WET DREDGE TRIAL REPORTS AND REFERENCE MATERIAL

12. Officers undertook a review of previous reports submitted to the Sea Fisheries Committee Scientific and Byelaws Sub-Committee and any additional material relevant to mechanical dredging. 3 sets of trials were authorised and conducted between 2001-2004 and during the initial trials the following dredge pattern was used:

Blade Width – A blade of no more than 70cm in length.

Adjustable Blade – To allow the tuning of the blade to be set at the right depth to reduce excessive cockle damage.

Sorting Grid Length – Should be at least 1m long

Grid Bar Spacing – Suitable for minimum size sorting 19mm used as undersized is defined as a cockle that will pass through a 20mm square gauge, equivalent to a shell length of around 26mm.

One Dredge used per vehicle

No Moving Parts – This is to prevent the dredge being turned into a dry dredge

Breakage Rate – Dredges should conform to a minimum of breakage rate (5% was considered fair)

Designated Area Of Use – Limit area where dredges can only be used.

13. Part of the conditions of authorisation included the following:

    (a) That fishing shall take place only during the hours of daylight. Daylight shall be deemed to start at 1 hour before sunrise, and cease at 1 hour after sunset.

    (b) A dredge log sheet is compiled and returned to the Joint Committee no later than the 5th day of each month.

14. Wet dredging at the Penfold Channel was recorded as only possible for a period of up to 2 hours on each tide. For the dredge to work efficiently it requires shallow water on an ebb tide thus limiting the time on the bed. Scientific officers monitored the trials and undertook assessments of mortality. A table of results and information on the trials are found at Annex B

15. The difference in spat mortality between the 2001 trial and 2003 appeared to be due to the lower spat densities and a greater minimum size of the discards in 2003. Higher densities in 2001 may have caused the spat to have already a high stress level. Larger shell sizes may give more protection from damage caused by dredging. This leads to the conclusion that percentage of undersize cockle and spat size may need to be taken into account when deciding upon opening an area to wet dredging.

16. The introduction of a chute enclosing the blade and spray bar seemed to help increase the fluidity of the sediment upon reaching the sorting grid and was thought to be gentler on the cockles. The chute also reduced loss of sediment and potential harvestable cockle from being lost over the side and damaged by the tractor wheels.

17. Monitoring of the benthic invertebrates and sediment modification occurred. The diversity of the bed was considered low prior to the onset of the dredge trial within the Penfold Channel. A slight reduction in density was noted of other invertebrates within areas of dredging, but was thought not to be detrimental to the diversity of the area.

18. Sedimentation was thought not to be adversely affected by the use of tractors and dredges. Several areas within the Penfold Channel area can be unsuitable for both dredgers and at times quad bikes or persons due to its sticky nature.

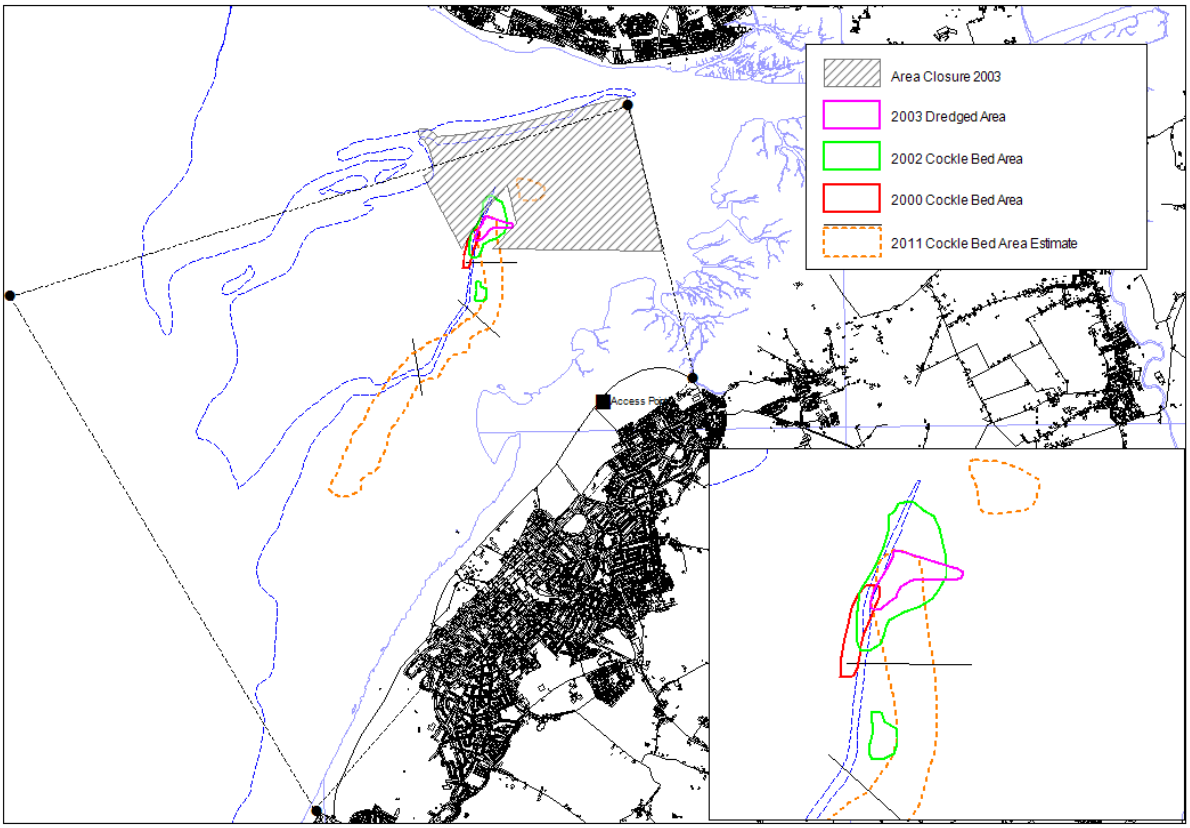

Figure 3. Historical Positions of Cockle Beds within the Penfold Channel between 2000-2003. Authorised dredging area and closure are marked.

19. A closure in the northern area of the bed from late 2002/2003 (as displayed in Figure 3) was implemented where the majority of the cockles were undersized. This was developed with the Shellfish Development Group and was adjusted as cockle bed developed.

20. Figure 3 displays the previous areas of cockle beds within the Penfold Channel in addition to the main dredged and authorised dredging area of 2003. The current site of the main density of cockles is within the areas previously dredged and hand gathered.

POTENTIAL MAIN MANAGEMENT OPTIONS

21 **Option 1**: Use of mechanical dredging (wet dredging) in localised areas under defined conditions and with a defined dredge specification as set out above. Further conditions such as the time limit and quota taken could be specified. Hand gathering would run alongside dredging and in additional areas till the density was reduced to a mean of 20/m^2 as measured by Authority scientists.

(a) This method has been previously used within this area and run alongside hand gathering. May limit the number of transient cockle fishermen as economic value of travel to the area may not be viable with the wet dredging running simultaneously.

(b) Large numbers of dredges may appear – increasing damage to the bed and disturbance of conservation features and may go against the conservation objectives of

the sites – Numbers could be limited by the specific dredge pattern and limits on open period of the area for wet dredges to the degree of damage.

(c) Fishing is limited to small periods during ebb tides and daylight hours

22. **Option 2:** Beds open after seasonal closure on 1 September and monitored and areas are closed by the NWIFCA when density levels decline to 20/m^2. No mechanical dredging permitted.

(a) Large numbers of hand gatherers – issues with disturbance and damage to conservation interest features at access points and health and safety.

(b) Enforcement of large numbers impossible with current resources of NWIFCA

(c) Less efficient methods being employed at sorting cockles which may be of concern as some areas will be still growing through.

(d) No modification to the cockle beds and large scale sedimentation structure alteration.

23. Further management options and considerations are found at Annex C in Fishery Officer's Report. A submission from a Southport Fisherman is attached at Annex D.

Scientific/IFCA Officer
8 June 2011

LOCAL GOVERNMENT (ACCESS TO INFORMATION) ACT, 1985

List of Background Papers

1. Final report on 2001/2002 Trial (W. Cook)

2. Impact Assessment for 2001 trial