

**NWIFCA Technical, Science and Byelaw  
Sub-Committee  
11<sup>th</sup> August 2015: 10:00 a.m.**

**AGENDA  
ITEM NO.  
7**

**SCIENCE REPORT  
25<sup>TH</sup> APRIL – 24<sup>TH</sup> JULY 2015**

**Staffing and Recruitment**

As Members are aware Ms Leadbeater left the Authority on 12<sup>th</sup> June. Following the advertising of the vacant science officer post, 65 applications were received and the process of short-listing has begun. It is hoped that the post will be filled as soon as possible, so that training and induction of the new officer can get underway. This will inevitably have an impact on the workload of the science team. IFCO Walters has been trained in aspects of assessing and issuing dispensations so that he can assist with that work. Officers will continue to explore where it is possible for IFCOs to assist with science workload.

**Cockle and Mussel Fisheries in the NWIFCA District**

IFCOs regularly report to the Science Team on the state of the cockle and mussel beds in the District and if signs are that there is significant stock then surveys are targeted at those beds. To date there have been no reports of any significant settlement of cockles. Details of the Solway and Leven cockle surveys are given in the report below.

Officers report that the West Kirby mussel bed in the Dee has more or less gone – it had formed on old cockle shell but has not been subject to mussel recruitment for a few years now. There is regular low level harvesting of size mussel in the Ribble Estuary. Details of the current known situation of all other beds are given in the report.

**SURVEY AND FISHERIES WORK**

**Fleetwood Mussels**

North Wharf off Fleetwood was inspected on 7<sup>th</sup> July (1.2 m ebb). Mussels have not taken on Black Scar - most of the bed is sanded up. There is a narrow strip of mussel and shell along the river edge to the east of the buoy line. Perch Scar has seen a good mussel settlement since last visit a couple of weeks ago. Coverage approx 60% <5mm seed mussel. King Scar has 2 clear settlements on about 50% of the area: the largest spatfall is mostly less than 6mm.

From what has been seen of the Neckings, coverage is about 50%, with mussels of between 25 and 40 mm, very fast grown and clean but loose. There have already been some losses to the recent winds. This is first rate relaying mussel in a very vulnerable area where we can expect very significant if not total loss before mid-November. The suggestion is that this area is revisited during the good ebbs in August with a view of getting it dredged and re-laid as quickly as possible. Previous attempts at hand gathering from this area have resulted in chaos because the tide gets there very quickly and there is nowhere practical to bag off mussels to transport them ashore in stages.

Rossall Scar has about 70% coverage of 20 to 30 mm mussel overlaid with a more recent spatfall of less than 6mm. The ground is stony and not ideal for hand gathering. This bed traditionally gets washed out during winter storms but previous observations show that a small stock remains "hard in" the stone over winter. If left this bed provides food resource for overwintering birds.

## Heysham Flat

A heliflight was chartered over the Bay on 18<sup>th</sup> May and covered both Heysham Flat and South America north Morecambe Bay. A foot inspection was carried out on 3<sup>rd</sup> July (1.1m ebb). The area has received at least two spatfalls – one very recent with pin prick mussels. One in the lower reaches of the scar has grown to around 15-20mm length. The settlement is very substantial and blanketing the skear (Figs. 1-3). It has covered the size mussel that had remained on top of the main *Sabellaria alveolata* reef area (Fig. 4). It is also all over the two skears beyond Dallam Dyke (Fig. 5). Dallam Dyke looks like it could fill in. It has a 'dam' of old shell almost stretching across its width at the northern end (Fig. 6). If that fills in then the whole dyke will fill in and the two skears join.

The 2014 mussel looks to be buried under 2015 settlement. It is unlikely to survive as the mussel puts down mud. The worms are also blanketed with seed mussel. There is very little across the whole skear in any fit condition. It was surveyed by Wildlife Trust Marine Trainees on 6<sup>th</sup> July. There is some settlement and tiny worm tubes, but this is covered by the pin prick mussel (Figs. 7 & 8).



Fig. 1. Heysham Flat skear 3<sup>rd</sup> July 2015.



Fig. 2. . Heysham Flat skear 3<sup>rd</sup> July 2015.

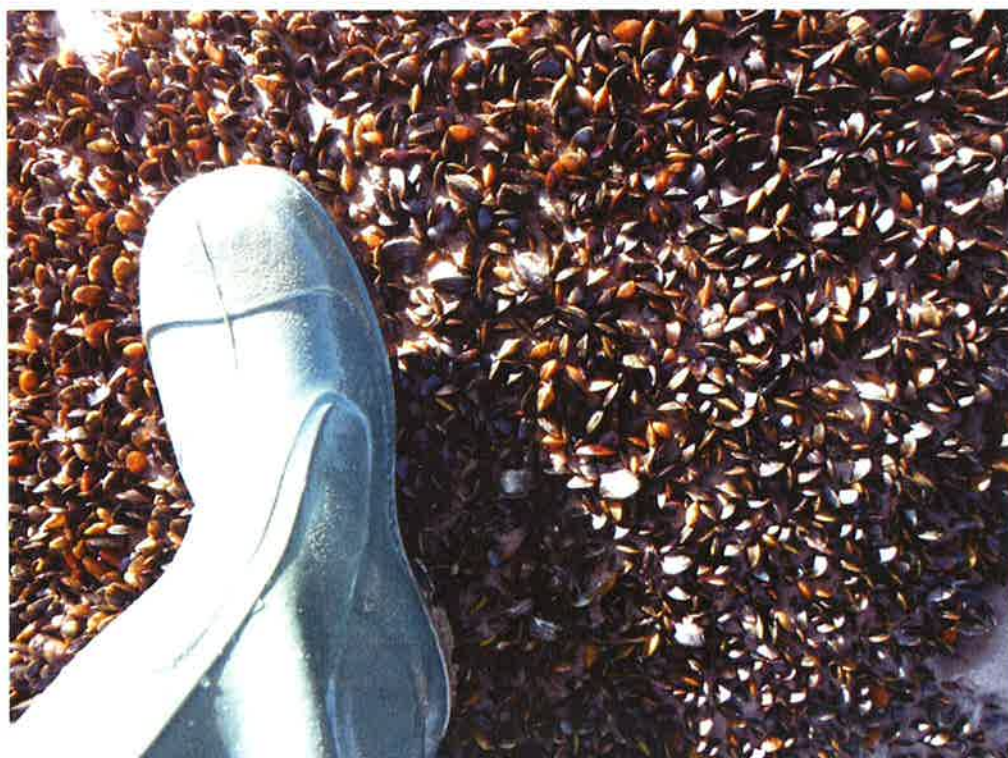


Fig. 3. . Heysham Flat skear 3<sup>rd</sup> July 2015.



Fig. 4. Heysham Flat skear 3<sup>rd</sup> July 2015. Seed mussel blanketing the size mussel remaining from 2014 covering the main honeycomb worm reef area.



Fig. 5. Looking across from Knott End skear to furthest skear at Heysham Flat 3<sup>rd</sup> July 2015.



Fig. 6. Dallam Dyke 3<sup>rd</sup> July 2015. 'Dam' nearly spanning the northern end.



Fig. 7. New settlement of *Sabellaria alveolata* with pin prick mussel on the tubes.  
Heysham Flat 3<sup>rd</sup> July 2015



Fig. 8. New settlement of *Sabellaria alveolata* with pin prick mussel on the tubes. Heysham Flat 3<sup>rd</sup> July 2015

### South America and North Morecambe Bay

Andy Deary and Mandy Knott inspected how accessible the area was on quads on 4<sup>th</sup> July (0.9m ebb), and whether there was any skear ground showing and any mussel settlement. It is now possible to drive down a long way (blue tracks in Figs. 9 and 10). The box in the figure is Box 1 from 2014. The red tracks are Matt Burdekin's from when we went out in 2013 on the RIB and he ran round the mussel bed. This area was covered in water and not accessible. Box 1 was lying in the water to the west of the sandbank that revealed on the tide. There was no change of colour in the water at all, with it all looking sandy and therefore not suitable substrate for mussel settlement. From the heliflight in May there was bare cobble further out, but with no settlement. Figure 11 shows what is left of the 'northern area' that had been left out of the dredge area for the past couple of years and had some persisting mussel on it last year. It is now sanded over.

The biggest indication of no mussel further out was that there were no birds flying out to that area, which is normally seen at low water when mussels are on the skears, and starfish on the mussels. This suggests there was nothing for them to feed on. There are large numbers of starfish swarming on the bottom end of Foulney still, which is further indication there is little or no mussel out on South America.

This does need inspecting again as we know from Heysham that there has been a very recent settlement so it is possible that a late spatfall could yet appear on these skears. The Senior Scientist intends on attending a neap water survey from one of the Menai Strat dredge boats at their invitation at the end of July.

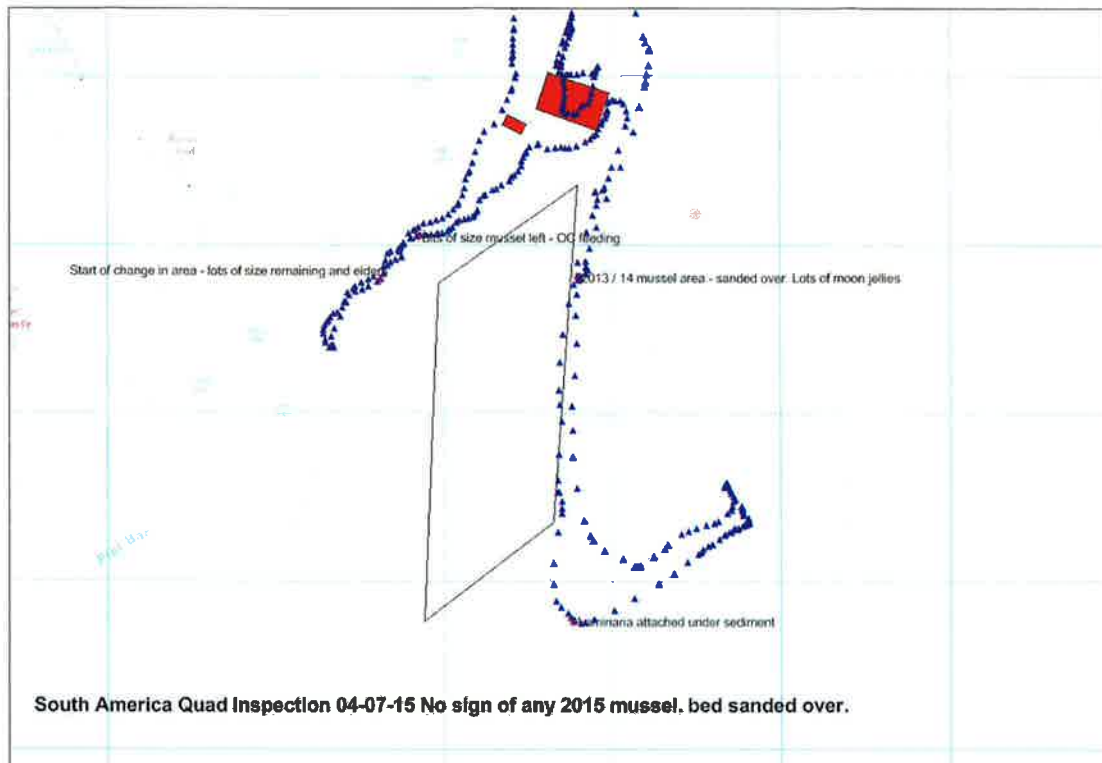


Fig. 9. South America Quad Inspection 04-07-15

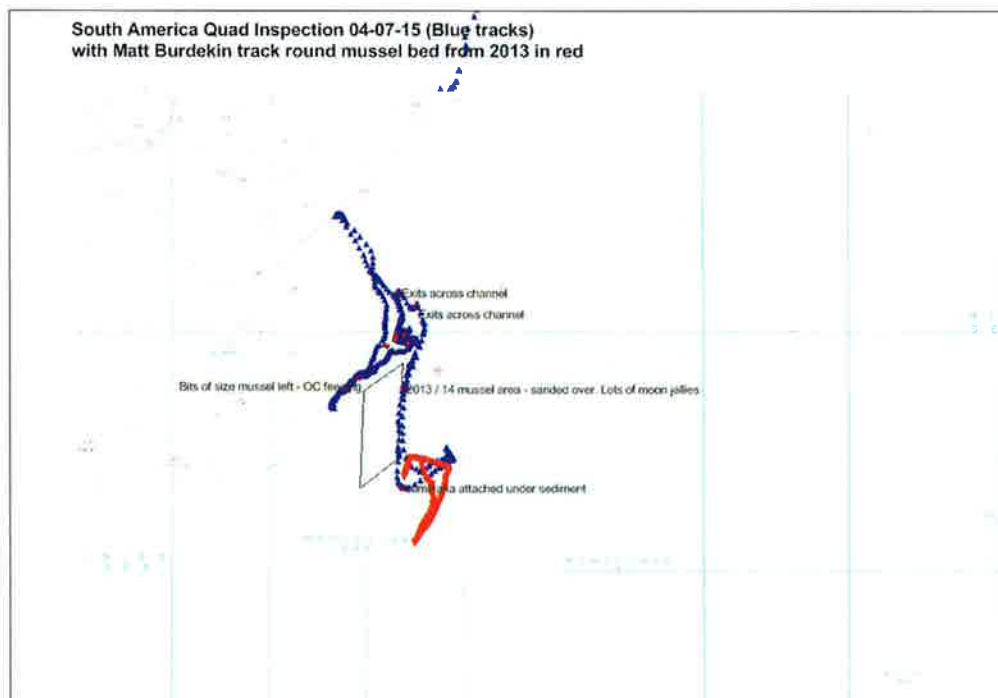


Fig. 10. South America Quad Inspection 04-07-15



Fig. 11. South America – 'northern' area now sanded over. 4<sup>th</sup> July 2015

The area around the oyster frames, and between the frames and Foulney 'Ditch' had hardly any mussel at all with some bare sand showing sand mason colonisation (Fig. 12). There was a small amount of 2014 mussel left right at low water line which oystercatcher were feeding on (Fig. 13). From the ditch over to Foulney there was the older barnacly and stunted mussel which is usually seen there. There were no signs of settlement there either.



Fig. 12. North Morecambe Bay between oyster frames and Foulney 'Ditch'.  
Bare sand with sand mason colonisation. 4<sup>th</sup> July 2015



Fig. 13. North Morecambe Bay between oyster frames and Foulney 'Ditch'. Small amount of 2014 mussel left right at low water line which OC were feeding on. 4<sup>th</sup> July 2015.

### **Foulney**

An inspection of Foulney on 6<sup>th</sup> July (1.0m ebb) revealed that there is no recent settlement of seed mussel anywhere on Foulney. The pin size seed observed in April has grown on well and there is a good covering of 20mm mussel across the majority of the central part of Foulney, which is hard in with a mixture of 40mm-size mussels in some parts, and a lot of dead shell in other parts. The 'island' and the area immediately opposite the island are still heavily predated on by starfish, with the bulk of the mussels in the vicinity showing that they had been predated on. There still remains some size and 40mm mussels in that area. Surveying was hampered by thick mats of green weed across the lower third of Foulney. From the axel near the island along Walney channel side for about 300yards and on to central Foulney for 300 yards the area consists of a mixture of clean 35mm – 40mm mussels with occasional size mussels and some grown on seed which may produce a viable commercial fishery this winter, providing it avoids storm damage. The area in the channel to the eastern side of Foulney towards the first tower has an area roughly the size of a football pitch which is covered with 40mm mussels on mussel mud, similar to the ones previously considered for authorising for removal as stunted stock. However the local IFCO believes that considering the position they are in, being covered by water for longer, will possibly see them make 45mm plus.

Also inspected was the area where Deepdock had the relaying trial and found that the area was still very much the same as after the dredging (2013), with very little mussel, some small patches of large mussels and no evidence of any seed.

### **Duddon Estuary**

The Duddon mussel bed was checked during another sample for CEFAS due to continuing poor results, and there was no sign of any seed mussel. Effort on the size mussel continues at a very low level.

### **Other mussel beds in the District.**

Industry have reported that there has been a significant and recent spatfall on the Ribble training walls and at Seafield Road. Seafield Slip mussel bed was inspected by the local IFCO on 8<sup>th</sup> July. The area from Church Scar to abreast of the Lytham Yacht Club is plastered with pin head mussels. Mussel mud is starting to form and there are some signs of early scouring. He reported that given that mussels in this area are an unknown quantity it is not known if they will persist, and that in his opinion some will remain in the lower parts but a lot will be lost over winter. There has been a 'phenomenal' spatfall on the Ribble Walls of which only very small areas are suitable for the hand gathering of size mussel. Sand shift seems to be the major cause of fatalities when they occur on the walls rather than scouring.

Whitehaven officers will inspect the Solway beds during patrols and a survey is scheduled for 4<sup>th</sup> August for Ellison Scar.

The Bivalve Mollusc Working Group met on 13<sup>th</sup> July to discuss the mussel resources available in Morecambe Bay. Please see the separate report and recommendations to TSB.

### **Solway Cockles**

Following HRA, cockle suction dredge surveys were carried out in the Solway Firth on 25<sup>th</sup> and 30<sup>th</sup> June onboard an industry vessel, surveying Middle Bank one day (only accessible by vessel), and Beckfoot and Cardurnock Flats (intertidal beds) on the second day (see figure 14). Samples were taken and figures calculated to work out the number of size cockle per m<sup>2</sup>. Results indicated that there is not a sufficient stock in any of the areas to currently open a fishery in the Solway (see figures 15-17). The maximum estimated number in Middle Bank was 8 size cockle per m<sup>2</sup> at one site, with three other sites ranging between 5 and 7 size cockles per m<sup>2</sup>. The rest of the 21 sites had less than 3 size cockles per m<sup>2</sup>. In Beckfoot, the maximum estimated number of size cockles per m<sup>2</sup> was 6 at two sites, with the other six sites all at less than 2 per m<sup>2</sup>. At Cardurnock one site had an estimated number of 7 size cockles per m<sup>2</sup>, while the three other sites had less than 1 per m<sup>2</sup>.

Calculations were also carried out to estimate the cockle densities if the undersize cockles grew on to size before the beginning of September. Only two of the twenty-one Middle Bank sites were estimated to have over 20 cockle per m<sup>2</sup> in this scenario. (NB. 20 size cockle per m<sup>2</sup> is the figure used by NW&NWSFC as the absolute minimum density threshold at which a fishery would be closed). However these figures were still very low (with a maximum of only 7 cockles over the minimum density threshold should all undersize cockles grow to size) indicating a fishery could not be opened later in 2015. All of the Beckfoot sites were estimated to have 15 or less cockles per m<sup>2</sup>. Two of the four Cardurnock sites were calculated to have estimated densities of 27 and 71 cockles per m<sup>2</sup>; however these cockles were well undersize and they would not be expected to reach size before September. The other two Cardurnock sites were estimated at 11 and <1 cockles per m<sup>2</sup>. These results all indicate that a cockle fishery cannot be opened in 2015. Officers will resurvey again in 2016 should industry suggest there may be a stock there.

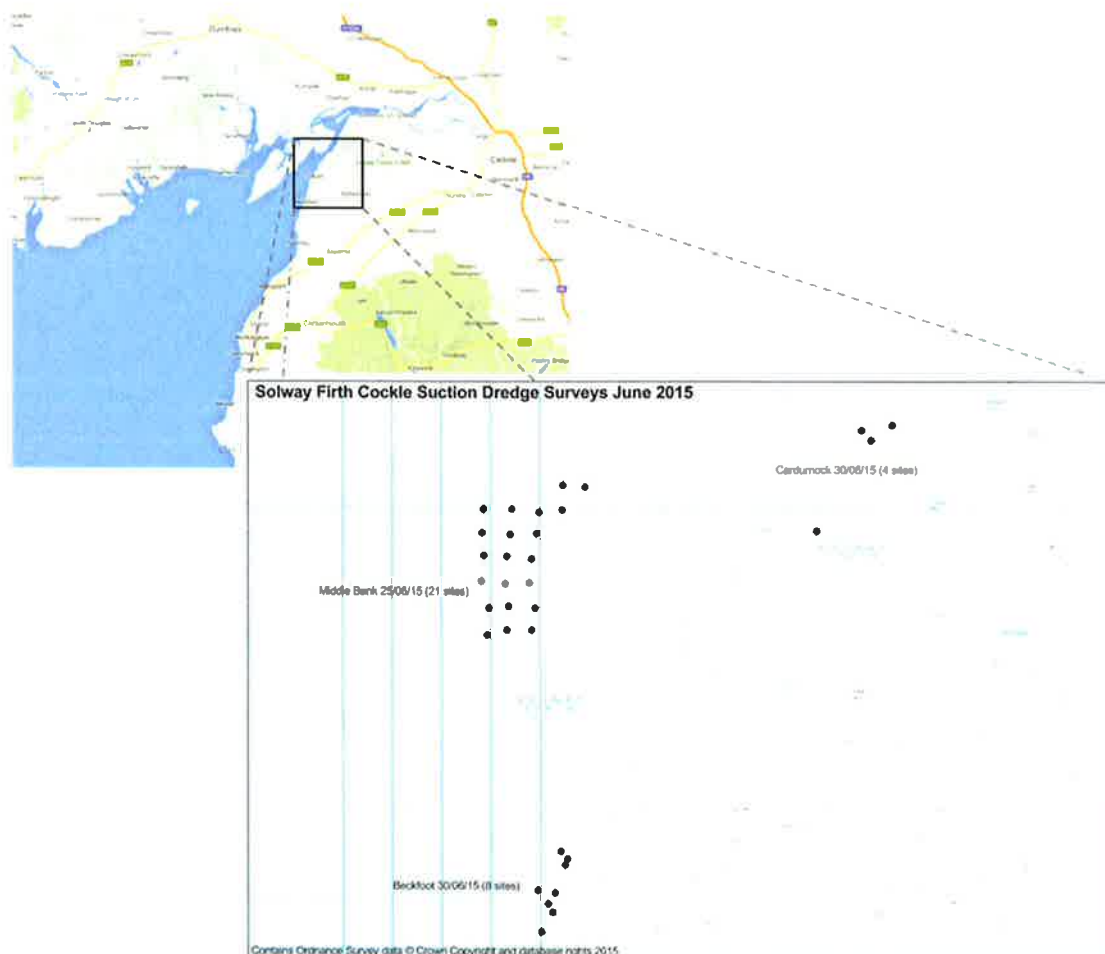


Fig.14. The Solway cockle survey stations (June 2015)

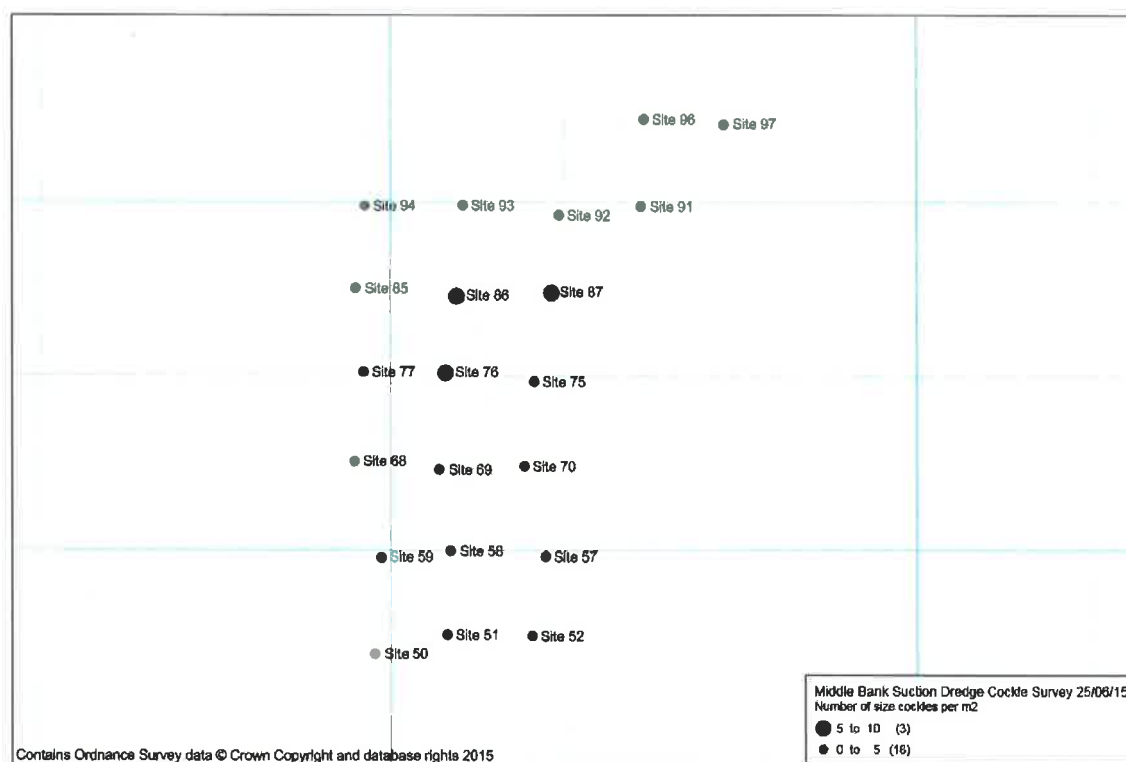


Fig. 15. Middle Bank survey stations with number of size cockle per m<sup>2</sup>

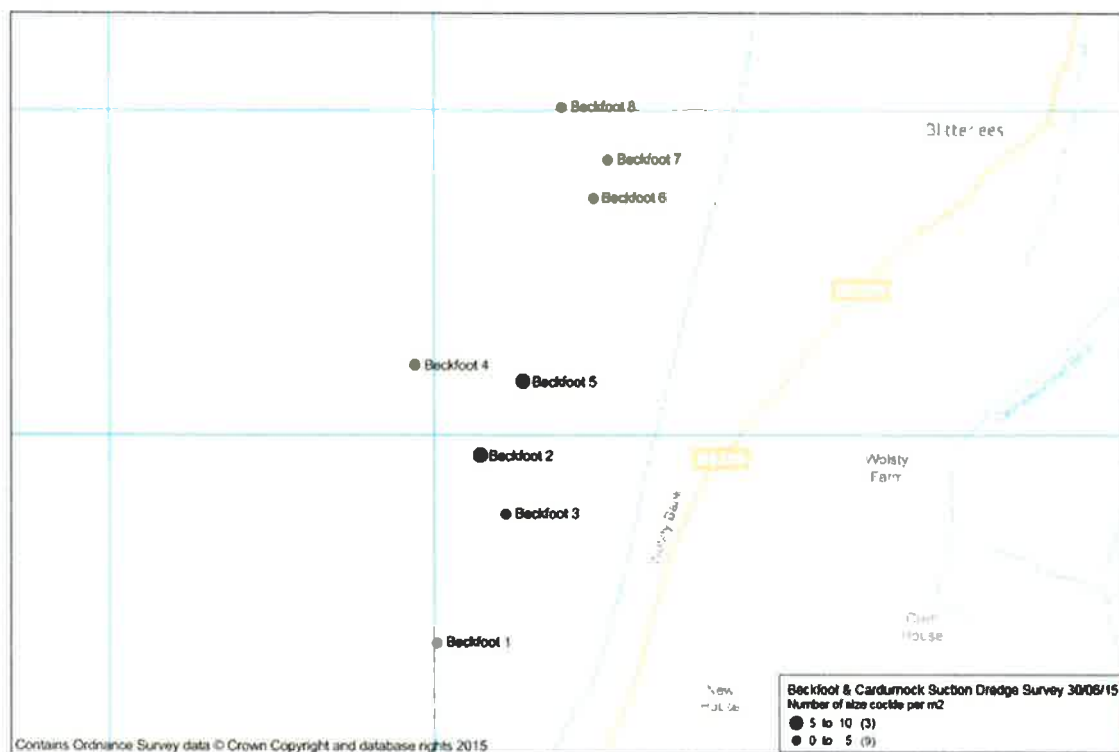


Fig. 16. Beckfoot survey stations with number of size cockle per m<sup>2</sup>

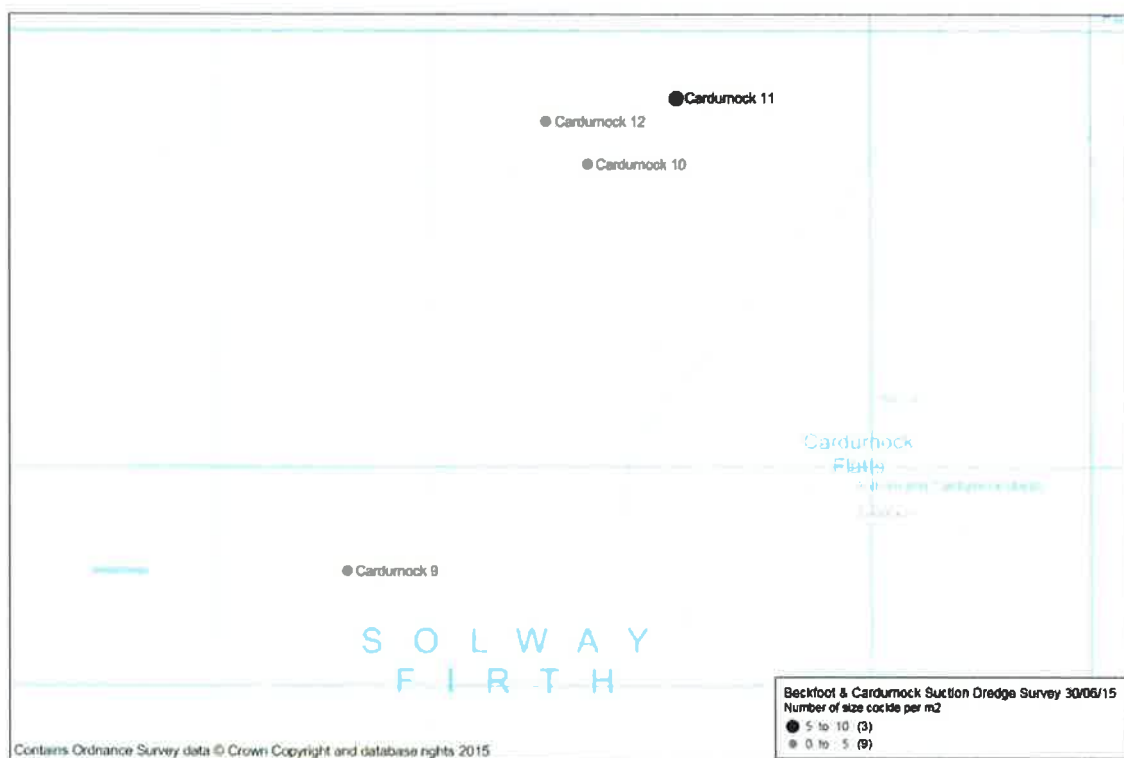


Fig.17. Cardurnock survey sites with number of size cockle per m<sup>2</sup>

## Leven Cockles

As reported to the June Authority meeting, cockle stocks on the Leven Island bed in Morecambe Bay were re-surveyed during June, as results from a previous survey were not believed to be representative due to high winds 'blowing' the cockles back in to the sand. Unfortunately although on the day of the repeat survey the winds abated, days leading up to it appeared to have influenced the position of the cockles in the sand and once again they were not coming up in the survey. A further survey in order to fully assess whether there is a commercial and viable stock on the bed is scheduled for the end of July. The position was stated clearly on the website to ensure Byelaw 3 permit holders were kept fully informed. This will be updated once results are processed. An HRA will be required before a decision over whether it could open or not can be made.

***It must be emphasised that if stocks are sufficient to open a fishery, it will only be low level. The stock on this bed, which as far as is known is the only bed in the Bay in this condition, is improved on past years, but it is not as abundant as in the large fishery years in the 2000s and must be kept in perspective.***

## Assessment of Fishing Activities in European Marine Sites

Progress has been made on the EMS assessments of fishing impacts. The table below provides the situation regarding work completed, and yet to be carried out as at 13<sup>th</sup> July 2015. Much has been achieved through the hard work of Ms Temple and Ms Leadbeater. However there is still much to be done:

	Expected Total	Not yet started	Currently underway	Complete	Signed off NE	On website and huddle
Non-occurring "Light" TLSE	12	0	0	12	12	13 <sup>th</sup> July 2015
TLSE	43	30	9	4	0	-
Appropriate Assessments	7	5	1	1	0	-
Totals	62	35	10	17	12	

1. 62 assessment documents expected.
2. Gear types are grouped across sites, so several gear type / feature interactions may be included in each assessment. For example the 12 light TLSE documents cover 214 gear types across 12 EMS.
3. Cockle and mussel fisheries:

Cockle and mussel fisheries are intermittent traditionally open, subject only to MLS and only closed when stock was low. The NWIFCA has done HRAs for periodic fisheries for many years. For example:

- a. 2015 cockle stock suction dredge survey, Solway Firth SAC
- b. 2014 hand-gathering seed mussel at Heysham Flat skear, Morecambe Bay SAC / SPA;
- c. 2013 dredging seed mussel Morecambe Bay SAC / SPA;
- d. 2012 hand-gathering cockles, Ribble and Alt Estuary SPA;

In future, under the EMS review cockle and mussel fisheries will be assessed when they occur. Management measures implemented as required will ensure no adverse effect on site integrity.

5. Bait collection- Crab tiling and bait digging occur in various EMS of the NWIFCA District. Crab tile surveys were carried out in the Walney channel area and the Mersey, where collectors reported that they were collecting on a recreational basis. Recreational activity will not be assessed under the EMS project. Should commercial bait collection occur in a EMS, such fisheries will be assessed under EMS protocols. An additional 14 HRAs could be needed but are not expected. If any members have information on bait collection in their area this would be very useful for Officers.

### **Byelaw Review**

Ms Knott and Ms Temple sit on the Byelaw Review group working on the drafts of byelaws to be brought to TSB and the Authority. Ms Temple leads on the Regulatory Impact Assessments and correspondence with the MMO, and in the informal consultations.

### **NORTH WEST COAST CONNECTIONS - NATIONAL GRID work on routing options for 400KV cables from Moorside nuclear power station**

Following the public consultation held by NWCC for the routing of high voltage power cables from the new-build nuclear power station on the Cumbrian coast to the grid, they announced their preferred route options on 17<sup>th</sup> June, which includes a tunnel under Morecambe Bay. The science team has worked with NWCC for over five years, and consider this to be the least damaging option to coastal, marine and intertidal areas as it will be drilled 25m under the seabed and through the bedrock itself, with exit points in industrial areas of Roosecote and Heysham.

There was a flurry of meetings held immediately around this announcement as the Duddon and Ravenglass Estuaries routing (overland) causes high concern to some interests, such as Lake District National Park and Friends of the Lake District, mainly due to visual impact of nearly 50m pylons crossing the coastal zone and being visible from beauty spots in the lakes. There are other issues of concern, including archaeology and designated (terrestrial) sites. A lengthy meeting took place over the alternatives – tunnel, horizontal directional drilling (HDD), rock-armoured cable laying and pylons, and explanations for why Grid considered the overlanding option preferable. There were some vociferous opponents to this option. The Senior Scientist and Natural England worked together to explain to other stakeholders the enormity of the impact on the marine environment through the rock armouring and pylons options. Grid explained the technical and financial difficulties of the tunneling and HDD options.

A watching brief will be kept on the project as it goes through the planning process in case the preferred options are withdrawn or refused by the Planning Inspectorate and other options come back on to the table. A letter from Friends of the Lake District is attached as Annex A, which indicates the strength of objection from other stakeholders to the proposed option round the Duddon.

### **Moorside Power Station**

Officers have been engaged with the initial discussions over Moorside power station in relation to the offshore surveys and the proposals for cooling waters outfall location. Ms Leadbeater attended the Biodiversity Group meeting, and the team will participate in various meetings as and when appropriate. Anything of relevance will be reported back to Members. It might be relevant to advise members that consultation around the new-build will be carried out at the same time as further formal consultation over the NWCC routing, dates to be confirmed.

### **West Cumbria Tidal Lagoon**

There have been no further developments with this proposal as far as meetings etc are concerned. Officers will attend and report back when appropriate.

## **Cumbria Wildlife Trust Marine Trainees Partnership**

This year's intake of Marine Trainees were started in June, and they received the one day's training course from Science Officers. They have carried out the *Sabellaria alveolata* survey on Heysham Flat with officers, and are due to return to finish the survey off in due course. One of the four will take on the project of writing the annual report on the Health and Distribution of the *Sabellaria*. There are ideas for two other projects that they may carry out in conjunction with the IFCA, and these are in discussion at the present time. One would be to assess levels of biodiversity on the *Sabellaria alveolata* reef at Allonby Bay, comparing it to cobble areas without *Sabellaria* cover. The other would be carried out before, during and after the seed mussel fishery at Heysham Flat to assess levels of bird disturbance to birds feeding on the skear.

## **TAG – 28<sup>th</sup> July – London**

The Senior Scientist attended the IFCA Technical Advisory Group meeting and can supply details to Members on request.

## **Project Inshore**

The final Stage 3 reports have all been published, including a National Report which 'provides a national strategic overview of the findings and recommendations provided in the 9 IFCA specific Strategic Sustainability Reviews which were the primary focus of Stage 3 of Project Inshore. In addition, the national overview report provides the opportunity to highlight those stocks which straddle the inshore boundary (6nm) and have therefore not been the focus of the IFCA specific reports'.

The individual IFCA Stage 3 reports 'detail bespoke sustainability reviews for inshore fisheries and describe a bespoke sustainability roadmap for each of the 9 IFCA regions involved. There is also a guide on stock assessment and harvest control rules provided'.

The reports can be found here:

<http://www.seafish.org/industry-support/fishing/project-inshore/project-reports/stage-3—strategic-sustainability-reviews>

As Members will recall the NWIFCA had concerns about the whole project and in particular the Stage 3 reports for the District, and made it clear we were distancing ourselves from it. The eight other IFCA reports can be accessed through the hyperlinks on the website. The NWIFCA link appears to be broken and one is directed to the Home page of Seafish. (Note: Sussex IFCA did not take part in Project Inshore due to their previous work in piloting a multi- species fishery methodology in 2010 with its 'Navigating the Future' Inshore Fisheries Sustainability Pilot (Dapling et al., 2010). Navigating the Future utilised the MSC pre-assessment criteria to evaluate the performance of 26 local inshore fisheries'.

In addition the MSC Pre-Assessment Database is available. The database is designed to 'allow users to determine how near or far every inshore Fishery in England is from the MSC's accreditation standard and whether or not they could progress to full assessment at some stage':

<http://msc.solidproject.co.uk/msc-project-inshore.aspx>

## **Halite – Gas Storage in Salt Caverns at Preesall near Fleetwood**

The Energy Minister Lord Bourne granted planning consent for the Preesall Underground Gas Storage Facility project on Friday 17<sup>th</sup> July. The facility is proposed to be constructed on the east side of the Wyre Estuary at Preesall in Lancashire and will be used to store and extract gas from local underground salt caverns. In their press statement DECC stated:

'The project may create up to 300 jobs during construction and up to 40 permanent jobs once operational. Preesall would be a demand response facility, with gas entering the national system in response to market conditions.

Energy and Climate Change Minister Lord Bourne, who is the Minister responsible for energy planning consents, said: 'Investment in new energy infrastructure is essential if we are to keep the lights on and bills down. This is a major project which will benefit the local economy by creating jobs and stimulating businesses. Gas is also the greenest fossil fuel and helps us lower our carbon emissions, which is important in the UK's move to a cleaner energy future.

In making this decision, DECC listened to all views and took into account further geological information that demonstrated the anticipated storage. We also considered an assessment by Senergy, an independent geological assessor, which suggested that the development was suitable for the local geology'.

The full Statutory Instrument Development Consent Order can be found here: <http://infrastructure.planningportal.gov.uk/document/3298371>

The Protect Wyre Group issued the following statement:

'It's obviously very disappointing news for all those people that have fought against this underground gas storage scheme for the past 13 years and the more you look into the events of those 13 years the more incredulous the decision seems to be.

Through repeated planning applications the scheme has been unanimously rejected at every level by the parish, borough and county councils; refused by the Planning Inspectorate following a Public Inquiry; refused by the then Secretary of State; a further Planning Examination (ExA) stated that the adverse effects of the proposed development would only be outweighed if a minimum of 300 mcm of working gas could be stored. The scheme was once again rejected by the Secretary of State and again by the High Court. However an appeal against the appeal made the Secretary of State re-examine the government's decision and today we have the result of Lord Bourne's recommendations to allow the scheme.

The government commissioned an independent assessment, conducted by Senergy (GB) Ltd, which concluded that Halite have only a 5.8% probability of achieving this 300 mcm figure.

Protect Wyre Group's view in its representation of 9th September 2014 to the Secretary of State was that the application should be refused as, using the ExA's own words, "If the minimum threshold cannot be met it would mean the development would not be permitted to proceed any further".

It's difficult to understand what has changed – a 5.8% probability is not, in our opinion, sufficient grounds for the granting of planning permission.

What's been the point of incurring the costs and gross expenditure of time and effort to the residents and the tax payers at all levels with all these Inquiries, examinations, surveys, meetings and the like over the last 13 years if a developer can keep re-appealing over and over again until they achieve their desired outcome?

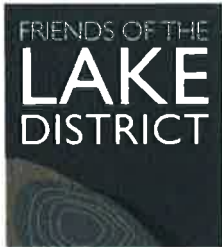
On a positive note, to everyone that played any part in opposing this scheme at any level, they should consider that their time was well spent and take heart that if this scheme ever comes to fruition, which is open to speculation and conjecture, then it will be so much smaller and so much safer than that originally proposed.

The geology is as suspect today as it was in July 2002'.

Members may remember that Science Officers had input into consultations and discussions over the discharge of brine into the coastal waters off Fleetwood from this proposal. Meetings were held and it was agreed and a document lodged with the Environment Agency Discharge Consent that should the project go ahead, that the MMO, Natural England, EA and NWIFCA were to be fully involved in all stages of planning, and in monitoring of discharge waters, and that means would be incorporated to ensure that should salinity levels exceed those predicted in the model used in the application, that operations would cease immediately.

There is a view that it is circumspect as to whether finance for the project will be found. However, Science Officers will remain vigilant to further progress, implement previously agreed courses of action, and report back to Members.

**Science Officers**  
**24<sup>th</sup> July 2015**



## ANNEX A

**Friends of the Lake District**  
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Mr Robert Powell  
National Grid  
Project Manager – North West Coast Connections  
FREEPOST NG NWCC

20<sup>th</sup> July 2015

Dear Robert

**North West Coast Connections Nationally Significant Infrastructure Project (NSIP): Draft route alignment and line rationalisation proposals**

As requested at the 30<sup>th</sup> June Stakeholder Reference Group meeting, Friends of the Lake District is providing interim comments regarding mitigation for the Onshore South with Tunnel route.

We would be grateful if you would acknowledge receipt of these comments, and we would also like you to answer the questions in the text.

The full text of our comments can be found on pages 2-10 of this letter.

Yours sincerely,

Kate Willshaw  
Policy Officer



## **North West Coast Connections Nationally Significant Infrastructure Project (NSIP): Draft route alignment and line rationalisation proposals**

Friends of the Lake District is submitting these interim comments regarding mitigation for the Onshore South with Tunnel route as requested by National Grid on 30<sup>th</sup> June 2015.

### **Summary**

- Friends of the Lake District continues to object to the Onshore South with Tunnel route. The Offshore South route is the only route which avoids damage to the landscape and biodiversity of the Lake District National Park whilst providing the required 400kV connection
- The choice of the Onshore South with Tunnel route will cause immense damage to Lake District landscapes if it is not properly mitigated
- As the environmentally acceptable Offshore South route has been rejected by NuGen, it has to be accepted that undergrounding as mitigation for landscape and visual impact will need to be undertaken to avoid damage to the Lake District. This has been pointed out by Friends of the Lake District and others for as long as this process has been ongoing
- National Grid is being inconsistent in meeting its legal Duties to the Lake District National Park's landscape
- Undergrounding cables as mitigation for damage to the landscape of the National Park should be presented as the preferred technology choice
- National Grid's evaluation of the landscape value of the Lake District National Park and its setting is inconsistent with the National Park's Landscape Character Assessment and the County Council's Cumulative Impact of Visual Infrastructure Study and undervalues landscape sensitivity in the National Park
- Removal of the 132kV line and replacement with a 400kV line is not a mitigation as presented as it will cause further damage to the National Park's landscape because of the larger pylons and wider wirescape
- Our first preference would be for both the existing 132kV overhead line and the 400kV line to be undergrounded (as in the Mendips AONB for the Hinkley C connection); but being pragmatic we would prefer to see the 132kV overhead line left in place (thus saving the costs of removal) and all of the 400kV cable through and adjacent to the National Park undergrounded
- Undergrounding of cables within the coastal plain would not cause long term scarring to the landscape as the current land use would allow the landscape to quickly revegetate

### **Introduction**

1. Friends of the Lake District considers that the Onshore South with Tunnel route selected by National Grid has been chosen against the advice of its own Environmental Assessment and also against the majority of the 2014 Stage 2 Route Corridor consultation responses including from the Lake District National Park, Natural England and Friends of the Lake District. We have major concerns about the impact that the chosen route will have on the landscapes of Lake District National Park especially if overhead lines are used. As we have consistently said in our previous responses, the Offshore South route is the only route which avoids damaging the landscape and biodiversity of the Lake District National Park.
2. The results of the public consultation in 2014 gave a strong steer that members of the public are very concerned about the impact of the proposed Onshore South with Tunnel route on the landscape and environment of the Lake District National Park. Of the five main issues of

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concern raised by the public, the Lake District's landscape featured highly in three of them, including that, where it was commented on, the Offshore South route was the preferred option for most people because it protects the landscape of the Lake District. The public and stakeholders are calling for significant mitigation to ensure that the National Park's landscape is protected. National Grid's current position of only considering overhead line alignments does nothing to meet these concerns and will not adequately consider how impacts should be addressed.

3. The Holford Rules state that areas of highest landscape amenity such as National Parks should be avoided altogether if possible, even if the total mileage is increased. By choosing the Onshore South with Tunnel route rather than the Offshore South route, the Holford Rules regarding routing have been disregarded by National Grid. However, in light of the fact that this is the chosen route, National Grid now needs to ensure that the special qualities of the Lake District National Park and its setting are not damaged by electricity infrastructure. This means that measures which actually mitigate properly for the chosen route should be implemented.

#### **Moorside's location**

4. The proposed power station at Moorside is located only 1.5km from the Lake District National Park boundary. This location means that, inevitably, there are potential impacts from the infrastructure needed to construct and operate a power station, including connection to the transmission grid.
5. The government knew that there would be possible impacts on the National Park when the site was allocated; this is stated in EN-6 Appraisal of Sustainability C.7.80 which states "*...the Appraisal of Sustainability has assessed that visual impacts [on the National Park] will be highly likely given the existing undeveloped nature of the nominated site, the scale of new development and the potential need for associated off-site grid connection infrastructure.*" We are concerned that the Government, NuGen, Ofgem and National Grid are not taking their responsibilities to protect the Lake District National Park seriously.
6. It will be more expensive to adequately mitigate to prevent landscape damage along an Onshore South route which goes through the Lake District National Park. However this should have been factored into the costs of the project from the beginning. It is not acceptable for National Grid to use consumer bills as a reason for not undertaking adequate mitigation in a national park when they, their customer Nugen, the regulator (Ofgem) and the Government knew all along that mitigation for the impact of new grid transmission would be needed.

#### **Lack of adequate mitigation**

7. Friends of the Lake District is very concerned that currently there are no proposals to adequately mitigate the 400kV cabling through and adjacent to the Lake District National Park other than discussion of different route alignments for overhead lines and different pylon designs. Neither of these will solve the landscape impact problem as they would be damaging to landscape of the National Park. We consider that in refusing to consider other forms of mitigation, National Grid is acting in a manner contrary to the Holford Rules and National Grid's Duties under both the Environment Act 1995 and the Electricity Act 1989;
8. If a landscape is designated in law as a national park, then it is of national importance and should be treated as such. Friends of the Lake District takes the position that the quality of the landscape in the west of the Lake District National Park and its setting is of such high

value (as recognised by its designation) that new 400kV lines will have a highly significant negative impact on the special qualities of the National Park.

9. Removal of 132kV lines is not a mitigation as claimed if they are to be replaced by taller pylons with a broader wirescape. National Grid's Virtual Reality model (shown at the Duddon Estuary meeting on 24<sup>th</sup> June) demonstrated that the landscape and visual impact of these taller pylons would be significantly greater than the existing 132kV line, which is in and of itself already a significant detractor in the landscape and was erected prior to the designation of the Lake District National Park.

#### **National Grid's inconsistency in relation to National Park designation**

10. Friends of the Lake District recognises that the Onshore South with Tunnel option was put forward by National Grid to avoid damage to the landscape and biodiversity in the south of the Lake District National Park and the Arnsdale and Silverdale and Forest of Bowland AONBs.
11. However, there is a logical inconsistency here; the chosen route will still cause significant landscape and visual impact damage in the west of the Lake District National Park. We therefore urge National Grid to fully meet its environmental obligations and Duties and minimise damage to the landscapes of the Lake District by using transmission methods such as undergrounding (conventional or Gas Insulated Line (GIL)), Horizontal Directional Drilling (HDD) or tunnelling all of which protect the landscape from overhead cabling.

#### **Visual Impact Provision project**

12. Last year's announcement by Ofgem's Visual Impact Provision project that it will allow National Grid to spend £500m on undergrounding overhead lines in other nationally protected landscapes flies in the face of the current reluctance to consider undergrounding in the west of Lake District National Park.
13. We consider that National Grid is being entirely inconsistent in its approach to protected landscapes by proposing a preferred route for new pylons that goes through or close to the Lake District National Park for 44km at the same time as promising undergrounding of existing lines to reduce impacts on other nationally protected landscapes.

#### **Undergrounding in the Mendips**

14. We are also aware that National Grid are undergrounding the new Hinkley C Connection 400kV lines through the Mendips AONB on the basis of reducing landscape impact as well as undergrounding an existing 132kV line. National Grid's Non-Technical Summary document Section 2.3.12 states:

*"The conclusion of these studies was in Study Area (Section) C only, through the Mendip Hills AONB, the benefits from the use of underground cables as an alternative to an overhead line would clearly outweigh any extra economic, social and environmental impacts and the additional costs of undergrounding could therefore be justified."*

And Section 4.2.8 states:

*EN-5 recognises that National Grid's existing rules for the routing of overhead lines (known as 'the Holford Rules') should form the basis of the approach to routing NSIPs that are transmission lines. National Grid has therefore used them in designing the route of the Proposed Development. Taking into account the Holford Rules, as well as technical, financial and other environmental considerations, National Grid proposes to install the*

*400kV connection through the Mendip Hills AONB as underground cables, to minimise the landscape and visual effects of the Proposed Development. In addition, National Grid proposes to bury underground 8km of the existing 132kV overhead line between Nailsea and Portishead to reduce the overall effect of the Proposed Development on the landscape of Somerset."*

15. Again, this shows an inconsistency in the way other protected landscapes are being treated by National Grid compared to the proposals for the west of the Lake District. This seems to indicate that National Grid values other protected landscapes more highly than the western section of the Lake District National Park. We would challenge this on the basis that if an area is designated as National Park, then its landscapes are of the highest quality and should be treated as such.

#### **National Park status in law and policy**

16. In England and Wales, the statutory purpose of National Parks as set out in the National Parks and Access to the Countryside Act 1949 and amended by the Environment Act 1995 under S61 is to conserve and enhance landscapes within the countryside whilst promoting public enjoyment of them and having regard for the social and economic well-being of those living within them. This is the highest level of landscape protection.

17. S62 of the Environment Act 1995 states that

*"when exercising or performing any functions which affect land in a National Park any relevant authority [National Grid is defined here as a Statutory Undertaker] shall have regard to National Park purposes. If it appears that there is a conflict between those purposes, greater weight should be attached to the purpose of conserving and enhancing the natural beauty, wildlife and cultural heritage of the National Park."*

Section 38 and Schedule 9 of the Electricity Act 1989 states that

*In formulating any relevant proposals, a licence holder [in this case National Grid] or a person authorised by exemption to generate, transmit, distribute or supply electricity:*

*shall have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest; and*

*shall do what he reasonably can to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects."*

18. The Duties placed on National Grid to ensure that protected landscapes are not damaged by electricity infrastructure development are strongly worded. We consider that these duties are not being adhered to by National Grid as it is not considering adequate mitigation for landscape damage by overhead lines.
19. A choice of overhead line alignments which all lie inside or within the setting of the Lake District National Park is the equivalent to asking whether one would prefer a kick in the

teeth or a punch in the ear. **None of the proposed overhead line alignments are acceptable on landscape and visual impact grounds.**

#### **Landscape issues discussion**

20. Friends of the Lake District has serious concerns about the length of the southern route which runs adjacent to or within the Lake District National Park. This includes the entire route south from Holmrook to Silecroft (in Section D) and then NE up the Whicham Valley, across the Duddon and SE down to Kirkby in Furness (Section E). We consider that the entirety of this section of the cable route should be undergrounded in some fashion whether via HDD, tunnelling, GIL or conventional methods.
21. The coastal plain from Holmrook to Silecroft is the only landscape in England where mountains meet a coastal plain with expansive views of mountains and sea all within the same vista. This is a hugely important landscape because of its uniqueness in England (the only comparable areas are Snowdonia in Wales and parts of North West Scotland). The 132kV line is already a detractor in this unique landscape and erection of a 400kV line would cause additional damage to the views and the landscape because of the increase in height of the pylons and the broadened wirescape.
22. The Lake District National Park Authority's guidance for this landscape is very clear; uncluttered, open and expansive views are hugely important to this landscape character area. This landscape was chosen for designation because of these special qualities and the erection of 50m tall pylons to replace the 132kV line which is already a landscape detractor will further degrade the uncluttered views to the high fells, will not allow for retention of openness and will not maintain an overall sense of unity, harmony and tranquility.
23. We consider National Grid's analysis of the landscape character sensitivity of the LCAs within the National Park to be badly flawed. We highlighted this in paragraphs 10.4.5 to 10.4.9 in our response to the 2014 Stage 2 Consultation which is copied below

***Friends of the Lake District is concerned that the landscape value and sensitivity of the coastal plain through which the routes run has been undervalued in the Route Corridor Study***

*The coastal plain through which this section of the RCS runs has open views between high fells to the coast. These views are highly valued as part of the Lake District's landscape character and 50m tall pylons would be a significant detractor both when looking inland to the mountains from the coast, and towards the coast from the fells e.g. from Corney Fell and Black Combe.*

*The RCS makes assessments of landscape sensitivity which do not seem to correspond with the Lake District National Park's LCT (Landscape Character Type) sensitivity analysis. For example, the landscape sensitivity assessment carried out for the consultation document states that the Coastal Sandstone Landscape Character Type (Type E) is only of medium sensitivity to electricity infrastructure. However, the LCT profile states that "The Coastal Sandstone Landscape Character Type is considered to have high visual sensitivity as a result of the strong sense of openness throughout and strong intervisibility with the High Fells."*

*This area of Cumbria has also been identified as having a very high significance of landscape effects from all scales of vertical infrastructure. Friends of the Lake District cannot reconcile these assessments with the assessment in the RCS wherein the landscape is only considered to have a medium sensitivity.*

*As the Lake District has the highest level of national landscape protection, and in relation to this has highly sensitive visual receptors (e.g. visitors, walkers, cyclists etc.) we consider that anywhere within or adjacent to the National Park should be considered to be of high or very high sensitivity to electricity infrastructure. Therefore any electricity infrastructure here should be undergrounded to avoid damage to the landscape of the National Park.*

24. In addition the newly published Cumulative Impact of Vertical Infrastructure Study<sup>1</sup> by Cumbria County Council indicates that this Landscape Character Area has the greatest significance of landscape effects from all scales of vertical infrastructure in the county. This area also has the greatest significance of visual effects from all scales of vertical infrastructure. It is therefore highly improbable that National Grid's evaluation of the sensitivity of this area to be "of medium landscape character and visual sensitivity to overhead lines" is correct. **We would like to see the evidence on which this assessment is based.**
25. As can be seen from Maps 1 and 2 below, the Whicham Valley and the Duddon Estuary are found to have significant cumulative landscape and visual impacts from vertical infrastructure already.
26. Friends of the Lake District made the following comments about our concerns regarding National Grid's evaluation of Section E.

***Friends of the Lake District is very concerned that the landscape value and sensitivity of the Whicham Valley and Duddon Estuary via which routes E1.1 and E2 run has been undervalued in the Route Corridor Study.***

*The boundaries of the Lake District Landscape Character Type subset "Areas of Distinctive Character" actually extend outside of the National Park boundary as they are part of the setting of the National Park and essential to its integrity.*

*The Whicham Valley sits within LDNPA LCT Type J: High Fell Fringe. The description for this states:*

*"There is strong intervisibility with adjacent higher Landscape Character Types giving high visual sensitivity. Overall the High Fell Fringe Landscape Character Type has limited to moderate capacity to accommodate change without compromising key characteristics."*

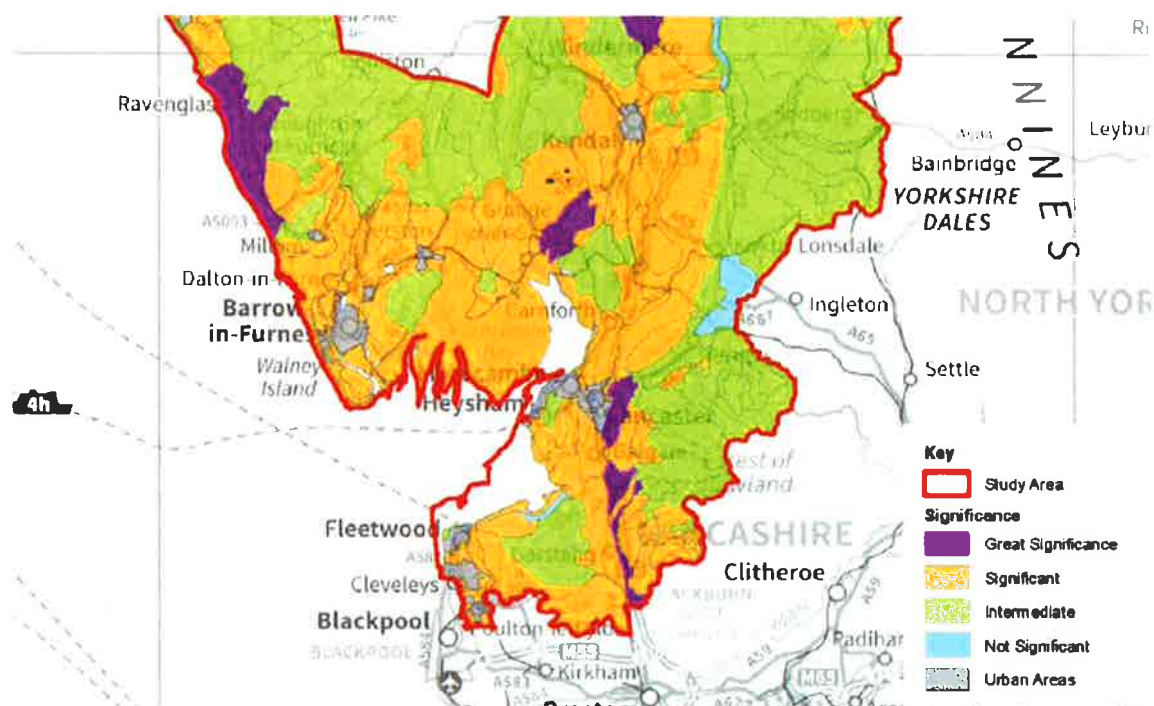
*Overall strong sense of tranquillity away from the A595; and*

*In addition to the sensitivities of Landscape Character Type J, sensitive attributes specific to Area of Distinctive Character 61 (Whicham Valley) are*

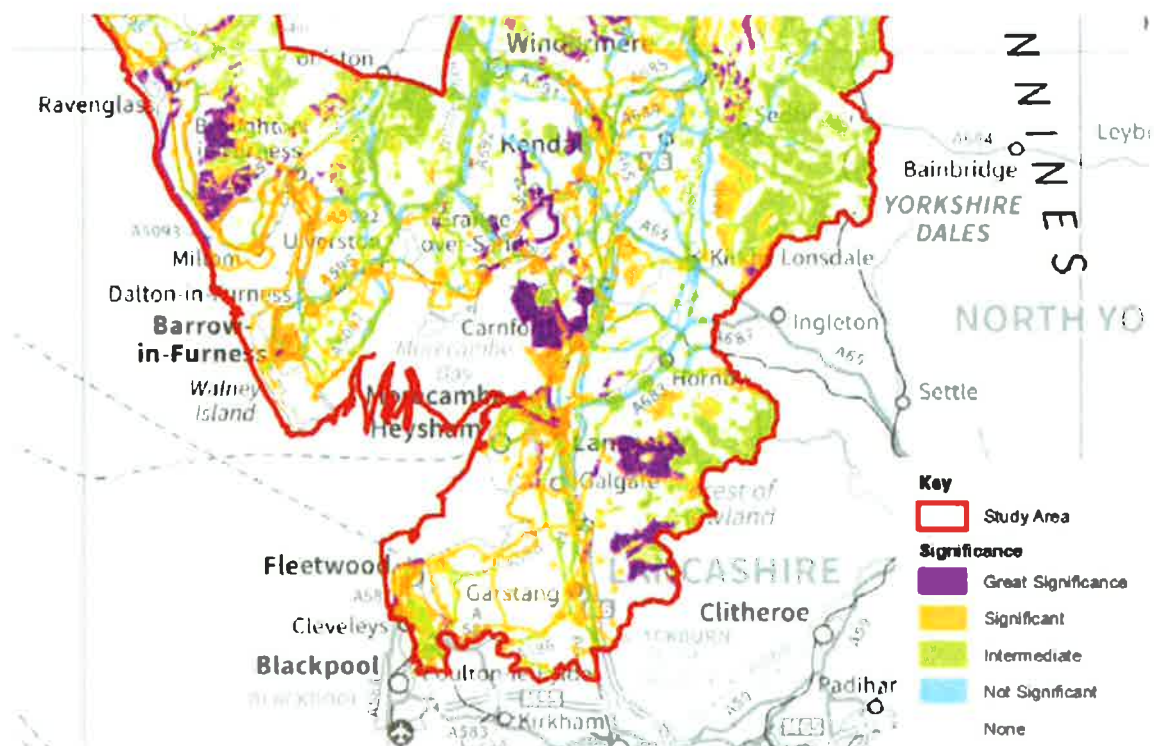
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<sup>1</sup> <http://www.cumbria.gov.uk/planning-environment/countryside/countryside-landscape/civi/civi.asp>

**Map 1** Map section from Overall significance of landscape effects from all scales of vertical infrastructure Map SIG.04



**Map 2 Map Section from Overall significance of cumulative visual effects from vertical infrastructure Map SIG.05**



Maps above taken from CCC's Cumulative Impact of Visual Infrastructure Study 2015.

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*Open views from the western end of the valley and the slopes of Black Combe, that are vulnerable to interruption from tall vertical or large scale developments*

*The Whicham Valley has views which are highly valued as part of the Lake District's landscape character and 50m tall pylons would be a significant detractor especially when looking south and east from Black Combe. The visual impact of the pylons from Black Combe and other peaks would be increased by the pylon line doubling back at the top of the Duddon Estuary to run south down the Furness Peninsula along the west side of Kirkby Moor.*

27. When compared with the area of the southern Lake District National Park where mitigation for landscape damage is taking place in the form of a tunnel under Morecambe Bay, the landscape sensitivity to cumulative vertical infrastructure for the west of the Lake District is the same or higher (i.e. Significant or Great Significance). If the landscape of the southern Lake District is sensitive enough to need significant expenditure on mitigation (i.e. the Morecambe Bay Tunnel), the landscape of the west is even more so.

#### **Recovery of land after undergrounding**

28. We asked National Grid to provide us with information about the recovery times of different types of land use after undergrounding of cables has taken place. This information has not been provided. National Grid has been at pains to tell us how wide the swathe of land take is for undergrounding, and we do understand that undergrounding would need up to a 60m wide swathe through the National Park. However, having been informed by the engineer's presentation at the Duddon Estuary workshop that an overhead line would need a permanent 60m wayleave swathe across woodlands for example, we consider that overhead lines would also have an impact over and above that of their permanent presence in the landscape. With an underground cable, the landscape would revegetate over time.
29. We have looked at the land uses along the route corridor through the Lake District National Park, and between south of the River Esk and Hallthwaites the land is mostly ryegrass agricultural grazing land or arable fields bounded by fences or low hawthorn hedgerows. There are few woodlands and even fewer areas of other biodiversity interest. We consider that this type of land use would recover faster than other more sensitive landscape types as ryegrass can be reseeded and hedgerows replanted.
30. The choice here seems to be a temporary scar on the landscape for several years whilst the route of an underground cable revegetates, or 60+ years of taller pylons and larger wirescapes. Friends of the Lake District considers that the temporary scar of undergrounded cables is the better option for the landscape in the long term.

#### **Duddon Crossing**

31. National Grid needs to seriously investigate the potential for crossing the Duddon by tunnelling or HDD from Millom to Askam-in-Furness. Tunnelling here would remove any need for undergrounding up the Whicham Valley and around the top of the Duddon to Kirkby-in-Furness where neither overhead lines nor undergrounding which impacts on SACs is acceptable.
32. Tunnelling under the Duddon Estuary would remove the need for more than 18km of undergrounded cable. During the Duddon Workshop on 24<sup>th</sup> June, National Grid's engineer Rod Richardson was asked how much a tunnel under the Duddon would be likely to cost. He

gave an estimated figure of between £150 and £200m. The cost of undergrounding 18km of cable at National Grid's estimated £32m per km is £576m. This makes the tunnel a considerably cheaper option than undergrounding around the Duddon.

#### **132kV line removal**

33. Friends of the Lake District would rather see the entirety of the 132kV line to the south of Sellafield retained and all of the 400kV line undergrounded. We see absolutely no benefit whatsoever in removing 132kV lines and replacing them with 400kV lines. This would result in a net detriment to the landscape and is certainly not the mitigation that National Grid presents it as.

#### **Conclusions**

34. National Grid, the regulator Ofgem, the Government and NuGen must accept that if a nuclear power station is to be built on the wrong side of a National Park, then legally they have a Duty under both the Electricity Act 1989 and the Environment Act 1995 to ensure that the purposes of National Park designation are not damaged by the infrastructure and that natural beauty of the Lake District is preserved. At the moment, the proposals put forward to connect this power station to the 400kV transmission grid would cause significant damage to the landscape and special qualities of the Lake District National Park.
35. The landscape of the Lake District National Park is very sensitive to vertical infrastructure development as demonstrated by the Landscape Character Assessment and the Cumulative Impact of Vertical Infrastructure Study. We are extremely concerned that National Grid is undervaluing the landscape quality of the National Park, and treating some protected landscapes as more valuable than others. We would like National Grid to explain the reasons why the west of the Lake District is not being treated in the same way as the south of the Lake District, and other National Parks and AONBs.
36. To reiterate, none of the overhead line alignments suggested within or adjacent to the National Park are acceptable on visual or landscape impact grounds. National Grid needs to reassess the whole length of the route which impacts on the National Park for undergrounding/tunnelling/HDD or GIL transmission technologies or to re-open consideration of the Offshore South route.

Yours sincerely,

Kate Willshaw  
Policy Officer