

NATIONAL MARINE BIOLOGICAL AQC SCHEME / BEQUALM

Tuesday 22 July 2014 10.00-15.00 - Teleconference

Attending: Tim Mackie (TM, NI EA), Claire Mason (CM, CEFAS), Astrid Fischer (AF, Technical Secretary, SAHFOS), Matthew Green (MG, Natural Resources Wales), Mandy Prior (MP, Finance Manager, EA), Keith Cooper (KC, CEFAS), Jim Ellis (JE, CEFAS), Becky Hitchin (BH, JNCC, epibiota representative), Grant Rowe (Fugro EMU, Contractor representative), Contractors (Sarah Hussey, SH, Thomson Ecology, fish component and David Hall, DH, Apem Ltd, invertebrate and PSA component)

Apologies: David Johns (DJ, Chair, SAHFOS), Myles O'Reilly (MoR, SEPA), Clare Scanlan (CS, SEPA), Dan Bayley (DB, JNCC), Joe Silke (JS, MI), Rafael Salas (RS, MI).

Last Meeting Actions & minutes

Astrid:

- Provide summary statements on the standards where possible. There are no summaries, just keywords for each standard. I am revising the document to include these. **Outstanding.**
- Action Astrid to put minutes of last meeting up on the web. **Done.**
- Action Astrid to find out if the companies of the contractor representative applicants support their application financially, if they are open, pro-active and inclusive, and send answers back to committee for selection. **Done.**

Myles:

- Produce a draft document together with RA that outlines the problems using WORMS or ERMS using scaleworms and other polychaetes to highlight issues. **Outstanding.**
- Sort out the transfer of files between Thomson Ecology and Apem Ltd. **Ongoing.**
- To discuss timescales with contractor and feedback information to Astrid. **Done.**

Claire:

- Rewrite annual report year 18 PSA paragraph and send to Astrid. **Done.**
- To discuss timescales with contractor and feedback information to Astrid. **Done.**

Clare Scanlan:

- To draft a document with some ID guidance on seagrass which then can be put up on the NMBAQC web site (Mandy is happy with the EA information to be used in this document). **Ongoing.**
- Discuss the tender for macroalgae with Mandy. **Done, not due until 2015-2016.** Biomass exercise specification may need a rethink as this component receives a lot of feedback. It may be possible to send a frozen sample on a J cloth as the samples need to be representative of a real sample and repeatable/reproducible. **Action all to provide feedback on how to improve the biomass exercise.**
- To discuss timescales with contractor and feedback information to Astrid. **Done.**

Mandy:

- Discuss the tender for macroalgae with Clare and to check when the contract runs out. **Done, not due until 2015-2016.**
- Find out how many EA staff can attend a possible macroalgae workshop. **N/A, workshop has been postponed until next year.**
- send out ballpark figure for the Saltmarsh ring test. **Done, this is £260 per individual. Tina Ainslee from the EA is organising this and the signup note should be going out soon for the test to be held in August.**
- Get involved with the call for participants for fish workshop.
- Ask Sarah Peaty about the current status of BEQUALM. CSEG may have a representative on BEQUALM. **Done.**
- Sort out the transfer of files between Thomson Ecology and Apem Ltd. **Ongoing.**
- Circulate Saltmarsh report once ready. **Done. The EA would like to publish the Saltmarsh standard with an ISBN link on the gov.uk web site around next year. The NMBAQC web site can then link to this.**

Jim

- Contact Sarah Hussey from Thomson to discuss timings of the exercises. **Done.**
- Discuss fish workshop with Thomson Ecology and give the go-ahead. **Done.**
- Discuss timescales with contractor and feedback information to Astrid. **Done.**

David Hall

- Arrange to see Claire Mason regarding the PSA component. **Done.**

All:

- Send current protocols to Astrid so that she can hold a library of relevant documents. **Outstanding- Astrid to send an email around with more information.**
- Let Astrid know which standards are relevant and which ones are not. **Ongoing.**
- If anyone gets ≥ 15 numbers of an unusual fish species, could they collect them and use them for a Fish ringtest exercise. **Ongoing.**
- Send comments on HBDSEG workplan to David Johns and Astrid. **Done.**
- Comment on second draft of epibiota document. **Outstanding.**

Phytoplankton update

- 64 participants from 40 laboratories are taking part in the 2014 exercise
- All sample counting and identification results are now in
- HAB quiz in "Oceanteacher" is underway with a deadline of 15th sept.
- We have purchased a license for the software "ProLab Plus" by QuoData to generate stats report for the exercise.
- The stats report should be out in October
- Workshop will take place in Denmark this year in the first week of November.

It was asked if the Phytoplankton Component could continue to use the BEQUALM brand, which (at least outside UK) has more recognition than NMBAQC? The committee felt that it was not appropriate as BEQUALM had now officially closed. **Action Astrid to check that links to BEQUALM are removed from the web site.** The committee felt that one thing we could do is to change the N in NMBAQC to stand for Northeast Atlantic rather than National if that

would make a difference. We all use common standards and approaches and the name NMBAQC is now well established, but it should reflect the area of expertise of the contractors administrating the ring tests of the scheme. **Action all to think about possible acronym change for NMBAQC.**

Contractors update- Thomson Ecology & Fish update

2014 / 2015 Participation (List correct as of 27th June 2014)

LabCode	F-RRT	F-RT
2101	x	
2102	x	x
2103	x	x
2104	x	x
2105	x	
2106	x	x
2107	x	
2108	x	x
2109	x	x
2110	x	x
2111	x	x
2112	x	x
2113	x	
2114	x	x
2115		x
2116		x
2117		x
2118		x
2119	x	
2120	x	
2121	x	
2122	x	
2123	x	
2124	x	
2125		x
TOTAL	20	14

Update at the meeting: There are now 21 participants for the F-RRT and 16 for the F-RT, with a total of 25 participating labs.

Progress on circulations

Scheme Year 20 (2012/13)

Exercise/ Reports	Status	Returns/Notes
FRRT05	Re-analysis of fish taxa completed. Completed and published.	<u>Fifteen fish taxa to be from Northwest European waters</u> (CSEMP samples where appropriate).
FRT07	Deadline for returns 04-04-14. Completed and published.	<u>General Fish Ring Test</u> – Assorted Fish Taxa (fifteen taxa).
Annual Fish Report	Pending.	Report writing will start upon completion of analysis and reporting on FRT07. This report should be with Jim soon.

Scheme Year 2014/15 Timetable for the Fish component

Exercise/ Reports	Event/Date	Notes
FRRT06	Protocol and request for specimens to be distributed 08-09-14.	<u>Fifteen fish taxa to be from Northwest European waters</u> (CSEMP samples where appropriate).
FRT08	Distribution of samples 03-12-2014	<u>General Fish Ring Test</u> – Assorted Fish Taxa (fifteen taxa).
Fish workshop	Late 2014 or early 2015	2.5 days, 12 participants Lead/support: Steve Coates & Peter Henderson

The Fish workshop should not clash with other training courses, such as the Institute of Fisheries Management workshop, unless this can be done as a joint workshop. Thomson intends to hold the workshop at their offices. It should also not clash with the Benthic

invertebrate workshop already planned for November. It would be good to send out signup information soon, we would need a date. The signup would also have to say that we won't be able to refund moneys should the workshop go ahead.

Development of 3rd ring test is still under discussion- Astrid mentioned that HBDSEG are discouraging a larval fish ring test. The NMBAQC committee was surprised by the HBDSEG response, and asked for clarification if this was considered for all ichthyoplankton including zooplankton. The consensus from NMBAQC was that many fish laboratories would benefit from such an exercise, and that when you take a sample you get a mixed stage post-larval catch, and that ring tests should be representative of real samples. Also, fish larvae are being used to identify spawning grounds. In marine recorder you can specify which stage of a species you have identified. It is something that Jim and Sarah, in consultation with Steve Milligan at Cefas, can look at over time. Targeted training exercises may inspire people.

One of the contractors had complained that the previous ring test included a non-British specimen, an Indian goatfish, which caught them out and took a long time to ID. The NMBAQC committee felt that invasive species that are likely to occur in British waters can be included, but not non-native species which are unlikely to be found here. Thomson apologised and hadn't intended to catch anyone out, but just showing that provenance alone is not always enough for identification. The UNESCO 3 volume guide to fish species could be used as a guideline on which species to include. **Action Jim to produce a list of fish species that can be included in ring tests- this should also be made clear on the NMBAQC web site.**

Epibiota update

Update on epi-benthic video and still analysis best practise guide. Becky Hitchin has talked to the JNCC monitoring head on Friday and she's very keen for us to continue working on the document and will hopefully get us all official work time in which to work on it. JNCC hopes to complete the 2nd draft within the next two weeks, and will send it to Astrid to circulate.

Tim has been approached by Dr. Annika Clements from AFBI (James Strong's replacement on the Seabed Habitat Mapping group) to see if she could become more involved in committee and video ring test etc. The NMBAQC committee agreed this would be an excellent idea. **Action Dan Bayley/ Becky Hitchin to liaise with Dr Annika Clements.**

Marine Eco-Sol, Bangor University and a large number of other marine specialists have been working on the new guide to 'Signs of Life on the Seabed of the British Isles' and it is well on the way to being ready for publishing. The first draft of the book contains 160 marine taxa from the north east Atlantic who produce evidence features.

The evidence features described within the book are commonly seen whilst diving or on drop down video footage, but are known to cause confusion when it comes to identification. The aim of the identification guide is to describe these evidence features to enable their identification to the correct taxa level upon data entry, so that they can make a contribution to our knowledge of marine biodiversity in the north east Atlantic. The book has been written with drop down video analysts, scientific and an amateur naturalist divers all in mind. If this identification guide sounds as though it could be of use to your organisation or company please could you send a letter (or email with signature) of support back to me. This expression of interest from you will help persuade publishers that this publication has commercial viability. We are convinced from speaking to many of you that there is a large interest in publishing this guide amongst agencies, universities, consultancies, video analysts

and divers, but in order to get the book out to you, we need some letters of support from you, for which we would be very grateful.

The book has been divided into six chapters: Eggs, Tubes, Burrows, Tracks, Siphons and Cryptic. Of the 160 species which are going to be included 100 have been written up into pages. Although the majority of the species are subtidal, there are a number of species included in the book that can be found on the intertidal shore. Each species has at least two photographs, one of the evidence feature and one of the species itself. The book will be fully proof read by specialists, two of whom have already offered their time towards the project. Although the book is nearing completion there are a number of areas of the project which still need finalising.

Action David Johns to write a letter of support for the book to be published.

Priorities from HBDSEG

David and Astrid attended the last HBDSEG meeting in Plymouth. Roger Proudfoot has made a real case for the need for extra funding for NMBAQC and MMS felt that they needed more information on the benefits of NMBAQC. Colin Moffat from Marine Scotland Science has volunteered to help NMBAQC do a gap analysis of where external quality control is needed. Roger will set up an initial contact between Colin and David. From our submitted report HBDSEG also mentioned that there was no need for initialising a fish larvae ring test as these are not routinely identified in CMA surveys.

Macroalgae

1. Macroalgal blooming/seagrass ring tests – bulletins and reports have been issued. We still have a significant discrepancy between the pass rates of Z-scores calculated using the mean of participants' results and compared with the GIS assessment. We are looking into this: if anyone has experience with the ImageJ type of programme and any thoughts on why this is, please get in touch with me.
2. Rocky shore macroalgae ring test – the bulletin and report have been issued. Performance overall was good. It was a more challenging exercise this time, so results are encouraging.
3. Certificates – there will be a delay in producing these, as the contractor is currently on maternity leave. I will try to get these out as soon as I can, but we also need the contractor to counter-sign them.
4. Poster – Astrid and I have put something together for a hard copy poster, and Astrid has done sterling work on turning this into an e-poster. Thanks to those who provided photos – the e-poster version gives us the opportunity to use more of them. Can you give us feedback on the drafts? So far we have signed up the e-poster for the Challenger Society meeting and the MASTS ASM in September.
5. Leaflets – we have also drafted a leaflet based on the poster. Can the Committee consider what sort of leaflet they prefer in terms of size and quality? Do you want an A4 version that any of us can print off, or something smaller (A5)? I thought a glossier A5 would be nice, but this would cost money to produce, so A4 easy print is the simpler (and cheaper) option.
6. Saltmarsh plants ring test – Mandy will speak to this, but the EA has kindly agreed to allow other participants to take part in the next exercise (likely to be in August). This will be on the basis of individual participants, rather than per lab, and the cost will be £230 per person. Reports are tailored to the individual. There will be a letter forthcoming from the EA. The EA's contract has another year to run, i.e. this coming exercise and the following one in 2015. How the exercise will run after this has yet to be discussed.

7. Workshop- it was too much for me to organise without Emma's help. I'm hoping to do it for next year.

Saltmarsh mapping standard
MAST (e)poster/ flyers

Contractors update- APEM Ltd

1. Subscriptions:

LabCode	RT47/48	LR19	MB22	OS56/57/58
BI_2101	1	1	1	1
BI_2102	1	1	1	1
BI_2103	1	1	-	1
BI_2104	1	1	-	1
BI_2105	1	1	-	1
BI_2106	1	1	-	1
BI_2107	1	1	-	1
BI_2108	1	-	-	-
BI_2109	1	-	-	-
BI_2110	1	1	1	-
BI_2111	1	-	1	-
BI_2112	1	-	-	1
BI_2113	1	-	-	1
BI_2114	1	-	-	1
BI_2115	1	-	-	1
BI_2116	1	-	-	1
BI_2117	1	-	-	-
BI_2118	1	-	-	1
BI_2119	1	-	-	-
BI_2120	1	-	-	-
BI_2121	-	1	-	1
BI_2122	-	-	-	1
BI_2123	-	-	-	1
BI_2124	-	-	-	1
BI_2125	-	-	-	1
BI_2126	-	-	-	1
BI_2127	-	-	-	1
BI_2128	-	-	-	1
BI_2129	-	-	-	1
BI_2130	-	-	-	1
BI_2131	-	-	-	1
BI_2132	-	-	-	1
BI_2133	-	-	-	1
BI_2134	-	-	-	1
BI_2135	-	-	-	1
BI_2136	-	-	-	1
BI_2137	-	-	-	1
BI_2138	-	-	-	1
	20	9	4	31

Still waiting to hear from some regular participants if they are signing up for this year.

LabCode	PS52/53/54/55	PS-OS01/02/03
PSA_2101	1	1
PSA_2102	1	1
PSA_2103	1	1
PSA_2104	1	1
PSA_2105	1	1
PSA_2106	1	1
PSA_2107	1	-
PSA_2108	1	-
PSA_2109	1	-
PSA_2110	1	-
PSA_2111	1	-
PSA_2112	1	-
PSA_2113	1	-
PSA_2114	1	-
PSA_2115	1	-
PSA_2116	-	1
PSA_2117	-	1
PSA_2118	-	1
PSA_2119	-	1
PSA_2120	-	1
	15	11

2. 2014-2015, Year 21 Operations

Source materials for all exercises have been collected (MB, RT & PS). APEM are awaiting the provision of NMBAQC scheme electronic files (historical scheme data and module workbooks) to ensure that the new scheme year can continue in the same format as previous years. Thirty-five organisations have subscribed to the NMBAQC scheme's BI/PS components for 2014-15 (30 for BI & 17 for PS). APEM will continue to promote the scheme's activities and encourage registration ahead of the first circulations.

Protocol documents have been completed for all modules except the new PS-OS module, which will be devised following the completion and examination of trial intercalibration exercises currently in progress. Participant feedback forms (BI & PS Components) have been created to be circulated to all participants ahead of the next Committee meeting.

A revised timetable for scheme exercises will need to be created due to delays in handover from the previous contractor. The new timetable will continue to focus upon realigning all operations within the financial year. All participants will be sent welcome emails along with the final timetable, as soon as it is available.

We have 35 different organisations overall and within a lab 5 sets of data can be submitted for the PSA exercise. For the macrobenthic exercise 6 European labs have signed up, including 2 Belgian, 3 Dutch and 1 French lab. As soon as all the documents from Thomson have been received including previous data and templates we can go ahead with the exercises and send out a new timetable/schedule. The schedule should specify clear cut-off dates/deadlines for submission of samples.

3. Workshops

A benthic invertebrate expert workshop is planned for w/c 10th November 2014 at Dove Marine Laboratory, Cullercoats. The tentative programme comprises three days for Sabellidae (Prof Adriana Giangrande, Lecce University, Italy) and one day for Sipuncula (Dr Monika Kedra, Institute of Oceanology, Poland).

The cost for the workshop is likely to be £600-£625 per participant.

It may be an idea to have an expert workshop more often than once every two years and hold the beginner's one on request as there is always more interest for the expert workshops. **Action Astrid to put on the agenda for next meeting to discuss.**

It would be good if we can send out the booking form for the invert workshop out now. The form should specify that fees cannot be refunded if the workshop does go ahead.

David Hall will keep the NMBAQC Contract managers and Financial manager up-to-date with a monthly detailed report. Also, they have renumbered the labs to create a code that explains which component and which year the data are from. It would be good if the same could be done for the other components. **Action Jim to contact Thomson and action Mandy to contact Clare/Emma to see if this can be arranged.**

PSA update

The EA have a subgroup that is going to look into the IQI development for universal Hammon-Grabs, they are just awaiting confirmation of funding for this programme. Claire Mason would like to be involved in this subgroup, especially to look at potential problems arising with bimodal/polymodal PSA distributions. It will be a subgroup of the HBDSEG benthic subgroup who will be investigating the IQI tool. **Action Mandy to contact Graham to arrange that Claire can participate in the IQI subgroup discussions.**

Claire is also still working on the pass/fail criteria for the PSA tests, and hopes to finish this by next week. We're also working on a new protocol for subsampling which we are bench testing at the moment. We plan to send out another sample with a protocol to test. The new subsampling protocol should then iron out any variations. We are doing an intercalibration test with the Leeds laboratory which should help us with the Own Sample test.

The year 19 and 20 PSA reports have been revised and the workshop report will be send out with the revised guidance on subsampling once this has been completed.

Benthic Invertebrates update

Issues with Year 20 own samples are as yet not resolved, but this is a contractual matter between EA and Thomson Ecology. The NMBAQC committee is very concerned it is dragging on and on and will result in serious delays. Thomson has promised to deliver a NMBAQC file transfer to me (which will assist David Hall with Year 21 templates etc.) but nothing has been delivered yet. **Action Myles/ Mandy to produce a note to inform participants where we are at and what the next steps will be regarding the outstanding samples.**

The Year 19 Statements of Performance have been signed by Tim and will be sent out shortly.

Zooplankton update

We are currently collating information on what species the UK zooplankton labs are analysing so we can aim for a small initial ring test in autumn or early winter. The aim is for the results to be discussed at the end of the SAHFOS zooplankton workshop which is currently being organised and is likely to be held June 2015, either week commencing 22nd

June or the week after. So far 6 UK labs have shown an interest in undertaking a zooplankton trial ring test (Apem, Marine Ecological Services, Cefas, Marine Scotland Science, SEPA and Jacobs).

AOB

Year 19 annual report. Astrid has sent out a revised version of the Annual report. **Action all to send feedback to Astrid. Action Mandy to help draft the paragraph on the statutory drivers, which for year 19 should also include the MCZ process.**

Question from Clare Scanlan regarding data policy (what happens with material produced for NMBAQC, incl workshop taxonomic guides, photographs etc). This is either stated explicitly within the contract. If not, then the contractor doing the work should be asked before using this material.

Contractor's representative

Regarding the Benthic Invertebrate Component:

"1. Taxonomy vs identification

I have recently had a look through some of the keys on the NMBQC website and compared them to older workshop type keys and it seems to me that the old approach in working through these new keys has changed. The old workshop keys (e.g. Garwood, 1981 on Syllidae) are all simple to follow with clear, obvious features to look for. However, some of the new keys are more complex and highlight features that are either difficult to see, or the keys are difficult to follow for identifiers as opposed to pure taxonomists. Two examples are the Lumbrineridae and Syllidae keys. The former means the animals have to be cut open to find the jaws to establish the ID of the animal and the latter starts with the need to look for tiny features on animals at the very first stage of the key.

My feeling is that the keys for identifiers should be simple and straight forward to use with easily recognised features. The more complicated keys such as those on the Lumbrineridae should be used as working documents for the pure taxonomists in their endeavour to move the taxonomy and classification of fauna forwards. The results of these endeavours should only be released once the ID has been established fully and new simplistic keys should be produced to allow mortal identifiers to use them to a high and consistent level.

2. This leads to my next point; namely that several faunal groups (perhaps even most) are still very much under development and the taxonomy is unclear. With species such as Lumbrineris gracilis vs Lumbrineris cingulata/aniara it seems better in my eyes that until the species has been fully established, there is a need to use a simpler version and more consistent naming of a taxa such as L gracilis until the classification has finally been established e.g. L. gracilis agg. rather than creating new species that are still uncertain (L. cingulata/aniara).

3. My final comment for now is the use of the Syllidae key based on San Martin. I understand fully the need to be open-minded with regards to the possibility of new species being found and established within UK waters. However, until the species are fully established and agreed upon by the taxonomic community, is it not better to use simpler (going back to point 1) and fully established keys (e.g. Garwood, 1982) before new complicated (and uncertain?) keys are being more widely used?

All these points are linked I suppose but having gone through a process to assess these problems recently it seems to me that these issues need to be discussed further. In my opinion the use of simple keys where obvious features are used to establish and identify species is crucial as it will result in much more consistent results and data sets across the UK whilst complicated keys with features hard to distinguish will result in poor quality data

overall. The aim of a scheme NMBAQC must be to ensure high quality data and I think that with complicated and non-user friendly keys this aim will not be met.”

NMBAQC promotes the case of using the most up-to-date keys as these are the ones recommended by the experts. We should always use the best available key. If a lab did not feel confident enough to speciate to species level they should not try to force identification to species but to genus instead. **Action Grant to contact Myles before sending a reply.**

Also, some of the participants were not aware of the participants area on the web site.

Action Astrid to send an email to participants so that everyone is aware of the participants area on the web site.

RTB45 contained scans of various diagrams that were not referenced.

The NMBAQC committee agreed that all diagrams should be appropriately acknowledged. **Action Grant to contact Myles so he can take this up with the contractor.**

Regarding the Epibiota Component:

“As the new MCZs and MPAs come on line I can see a renewed interest and greater demand for QA / QC in epifaunal ID, given some of the features in these sites. I therefore think it would be timely for NMBAQC to organise epifaunal taxonomic workshops like it did 10 years ago in Strangford Lough. Joanne Porter, Dan Harries, Hamish Mair and myself have recently run a pilot scientific diver training programme in scientific field skills. We have recently been asked to run a similar course again by NERC but we can also see a need to run taxonomic courses too (especially hydroids, bryozoans and sponges). We have good links with Ulster Museum on sponges etc so Connecting all the dots, I can see an opportunity for an NMBAQC supported course at our all-weather diving campus in Stromness in the autumn / winter when the cas will all have an underspend (?)”

The NMBAQC committee felt that it was an excellent idea to have a training session and it would be particularly useful if the standard of the course is that of expert identification. Tim mentioned the Hydroids and Hydrozoan workshop a few years back which was very well received. NMBAQC would be happy to give NMBAQC backing to Bill Sanderson providing he would wish to organise a training workshop using experts of international standard. However, would it be NMBAQC who were to organise such a workshop this should go out to tender.

eDNA

There may be some money from Cefas for processing of macrobenthic samples for eDNA barcoding. This would be particular of interest for specific species (e.g. invasive or uncommon lagoon species). But it would be good to know in general what the markers need to be, and mostly for high impact invasive species it is important to know a species is there before it has taken control of an area. eDNA barcoding can work well with relatively enclosed bodies of water but may be less effective at lower dilutions e.g. in open coastal waters. Also, the marker has to be based on a 100% positive ID- so that you don't have a false negative. Samples should be preserved in ethanol, formaldehyde breaks down DNA into smaller pieces. The eDNA barcoding would be a presence/ absence measurement, not quantitative measurements.