

NATIONAL MARINE BIOLOGICAL AQC SCHEME

10th October 2014. 10.30-15.30

Location: SEPA, Clearwater House, Edinburgh

Attending: David Johns (DJ, Chair, SAHFOS), Tim Mackie (TM, NI EA), Myles O'Reilly (MoR, SEPA), Claire Mason (CM, CEFAS), Clare Scanlan (CS, SEPA), Astrid Fischer (AF, Technical Secretary, SAHFOS), Matthew Green (MG, Natural Resources Wales), Emma Verling (EV, JNCC) by phone, Rafael Salas (RS, MI) by phone, Grant Rowe, (Fugro EMU, contractors representative), Carol Milner (CMi, Apem Ltd, Contractor), Sarah Hussey (SH, Thomson Ecology Ltd, Contractor), David Hall (DH, Apem Ltd, Contractor), Rohan Holt (RH, Natural Resources Wales) by phone, Charlie Lindenbaum (CL, Natural Resources Wales) by phone.

Apologies: Mandy Prior (MP, Finance Manager, EA), Keith Cooper (KC, CEFAS), Jim Ellis (JE, CEFAS), Joe Silke (JS, 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. A revised document is included with the agenda. The ones that are already on our web site are highlighted in yellow. I suggest that I will add the standards in green. Action Astrid to include the standards on the NMBAQC web site and in the Prue Addison document. The recent information on the latest British standard circulated is already included on the web site. Action David J to see if NMBAQC can receive a copy of this standard.
- Check that links to BEQUALM are removed from the web site. Done.
- Put idea to have an expert invertebrate workshop more than once every two years, and a beginner's one on request, on the agenda for next meeting to discuss. Done.
- Send an email to participants so that everyone is aware of the Participants area on the web site. Done.
- Send an email around with more information on library of current protocols.

I currently hold the following protocols:

- PSA for Supporting Biological Analysis
- Guidelines for Processing Marine Macrobenthic Invertebrate Samples
- Protocol for the Fish Ring test F_RT04
- Protocol for the Lab reference LR15
- Protocol for the Macrobenthic exercise MB18
- Protocol for the Benthic Ring Test RT39
- Cefas Counting and Processing Protocol for Video Epibiota
- MESH guidelines for video epibiota

As we are trying to develop different components, and with the possibility of changes in contractors, I think it will be good if the NMBAQC Secretariat could hold a library of the protocols used. It would also be good to have an idea of the Standard Operating Procedures that CMA's adhere to, so that if we are to develop new components (e.g. zooplankton, epibiota, saltmarsh) that we can include these in a Best Practise Guide. Also, if legislation changes and NMBAQC protocols need to be adapted accordingly, it would be good to have a library of information.

Myles:

- Produce a draft document together with RA that outlines the problems using WORMS or ERMS using scaleworms and other polychaetes to highlight issues. *Ongoing.*
- Sort out the transfer of files between Thomson Ecology and Apem Ltd. *Done.*
- Produce a note to inform participants where we are at and what the next steps will be regarding the outstanding samples (together with Mandy). *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.*

Mandy:

- Sort out the transfer of files between Thomson Ecology and Apem Ltd. *Done.*
- Contact Clare/Emma to see if a code can be created for each component that explains which component and which year the data are from. *Ongoing, contractor just returned from maternity leave.*
- Contact Graham to arrange that Claire can participate in the IQI subgroup discussions. *Done.*
- Produce a note to inform participants where we are at and what the next steps will be regarding the outstanding samples (together with Myles). *Done.*
- Help draft the paragraph on the statutory drivers for the Year 19 annual report, this should also include the MCZ process. *Done.*

Jim:

- Produce a list of fish species that can be included in ring tests- this should also be made clear on the NMBAQC web site. *Ongoing.*
- Contact Thomson to see if a code can be created for each component; that explains which component and which year the data are from. *Done.*

Dan:

- Liaise with Dr Annika Clements. *Ongoing.*

David Johns:

- Write a letter of support for the 'Signs of Life on the Seabed of the British Isles' book to be published. *Done.*

Grant:

- Contact Myles before sending a reply to the contractors regarding their questions raised. *Done.*

All:

- Send current protocols to Astrid so that she can hold a library of relevant documents. *Outstanding, see Actions Astrid.*
- Let Astrid know which British standards are relevant and which ones are not. *Outstanding, see Actions Astrid.*
- Send samples of less common species for use in a Fish ringtest exercise to Thomson. *Ongoing. Action Sarah to send around a list of species of interest, this could be due*

to unusual size class or more uncommon species. They would need a minimum of 25 specimens.

- Comment on second draft of epibiota document. Outstanding, second draft has not been released yet.
- To provide feedback on how to improve the Macroalgae biomass exercise. Ongoing.
- Think about possible acronym change for NMBAQC (N standing for North Atlantic rather than National). On current agenda.
- Send feedback to Astrid on Year 19 Annual Report. Done, the annual report is now on the web.

Minutes of the last meeting

NMBAQC name (North Atlantic instead of National). Everyone agreed that this would be a sensible step to take. Action David Johns to ask HBDSEG for approval of the name change.

Epibiota update- Emma Verling to call in at 10.45

Emma is taking over the epibiota lead from Dan Bayley, who is now undertaking a PhD. The draft document sent around is produced by Becky Hitchin and comments are very welcome. They have decided to split the guidelines into two: operational guidelines (document distributed for this meeting) and interpretation & analysis guidelines (document to be produced). RH commented that in the field operation there should be a bit more guidance on the peripheral conditions (driving the boat, conditions, how are the apparatus brought overboard), and it would be good if the camera/video section, which is the part that is likely to be outdated first, was in a separate section so that in future this part only could be updated. Stills and video images are no longer separate units but are increasingly overlapping, therefore the document means to set out minimum guidelines. An idea would be to state what would be ideal and what would be straightforward, e.g. "Your setup must have a scaling device. Optimal would be linear laser, straightforward would be a 5cm scaling bar." How does the guide relate to existing standards? The guide complies with existing standards and does not contradict it. Standards are umbrella documents, this is a Best Practise Standard Operating Procedure for NMBAQC, and it will be used for contracting out research for CMAs. The Checklist included is to qualify META data, so we know to which extent the data can be used for further research. Action all to send comments to Emma by 31st October. Action Matt Green and Claire Mason to provide Emma Verling with contact details of other interested parties in this document. Action Myles to circulate the report to SNH as well.

Phytoplankton update- Rafael Salas to call in at 11.00

All results from this summer's test, sample enumeration and identification, have come in. As part of the exercise a HAB online quiz was held, the deadline for submission of results is 24th October 2014. A workshop is being prepared for the 1st week of December, Monday 1st-Wednesday 3rd December, in Hillarød, Denmark. This will be a 2½ day workshop comprising of 1½ day lectures, practicals, cultures and microscope sessions, focussing on particular genus. The final 1 day will focus on statistics and results, and will give participants a chance to showcase their work.

We are considering including biovolume calculation in our test for next year, this will be something to be discussed at the workshop. We are currently using a statistical software package (Prolab Plus) from a company in Germany, which does statistical calculation to an ISO standard and stores data over a range of years so that you can use these to compare long-term trends. Participants can input their data into this software package themselves so that it makes it easier to run the analysis. There are only a few places for the phytoplankton

workshop remaining, the limiting factor being the accommodation facilities, any further participants would have to book their own accommodation.

Bequalm was closed in January this year so all logos/references should be removed from future paperwork.

Priorities from and for HBDSEG

Colin Moffatt is looking for alternative funding for NMBAQC. The easiest way forward would be a top slice from Defra funding but this has so far not been successful. Clare S mentioned that the UKTAG meeting is coming up and she would like to produce a paper to them to highlight the issues. **Action Clare S to draft and circulate a paper for UKTAG meeting (post meeting note: this has been done).**

Action David: Issues to raise at next HBDSEG meeting:

- Name change to North-Atlantic Marine Biological Analytical Quality Control Scheme
- Find out who deals with food web descriptors (this may be Simon Greenstreet), to raise the issue again of fish larvae ring test, look at juvenile fish within context
- e-DNA, this is being tested currently and there is no QA/QC on this as far as we are aware.
- Tender contracts, including those for universities, should provide a sampling and processing protocol as well as a QA specification. (Cefas guidelines should also include this, Action Claire M to check).

Contractor's update APEM

PSA Update

The PSA replicates have gone out and the automatic spreadsheets have been disabled to see where errors occur in the data processing. The full report is included below. We are working on the protocol for the Own Sample test, it's nearly there. We are asking participants to send us data information and a field photograph (or photograph on receipt of sample). We haven't received any information back as yet. People have until the 12th December to submit their data.

The workshop reports have also now been circulated by Claire M. The Pass/Fail criteria are a rolling exercise.

What to do in Best Practise Guidance about freezing samples

This issue has been raised by Roger Proudfoot, as the British Standard says that samples should not be frozen. However, there are three points to be made:

- 1) the BS scope is on sediments/sludges, not environmental samples
- 2) this BS is up for review or withdrawal if no-one volunteers to take the lead
- 3) research evidence suggested there is no difference between freezing/not freezing samples.

Action Claire M to update the Best Practise guidance to explain this and change 'must' be frozen to 'should'. Action Claire M to let BS know that the scope of the standard is not environmental samples.

Action all to let Astrid know when standards are being withdrawn or revised.

1. Subscriptions

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	-
PSA_2107	1	-
PSA_2108	1	-
PSA_2109	1	-
PSA_2110	1	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

The 2014-2015 timetable has been created, sent to participants and posted on the scheme website. The first circulation of PS exercises (PS module; PS52 & PS53) was completed in line with the timetable.

The PS module has been developed to add an assessment of data merging and manipulation software / spreadsheets utilised by the participants; the previous exercises' automated data submission spreadsheets have been disabled and participants are required to enter these data from their own methods. This will identify and software products / spreadsheets that may have become corrupted.

The PS-OS module has been slightly delayed, whilst the protocol for this new module is reviewed. The first exercise will commence soon and pass/fail criteria for all PS modules will be trialled and developed over the course of the scheme year.

Returns and results are summarised in the table below.

Exercise	Status	Returns / Comments
PS52	Samples distributed 15/09/14 Exercise active	Mud/Sand Test 0 out of 14 (15) returns
PS53	Samples distributed 15/09/14 Exercise active	Diamicton Test 0 out of 14 (15) returns
PS54	Samples to be distributed 04/12/14 Exercise in preparation	Gravel Test 0 out of 14 (15) returns
PS55	Samples to be distributed 04/12/14 Exercise in preparation	Diamicton Test 0 out of 14 (15) returns
PS-OS01-03	Samples to be requested ASAP (03/10/14) Exercise in preparation	0 out of 11 lists of samples 0 out of 11 datasets received 0 out of 33 samples received

a. Issues arising

No issues to date.

3. PSA Workshops

A workshop is not planned for this Scheme year. The reports/presentations from the previous workshop are now available for download. All participants have been notified by the Contract Manager.

Benthic Invertebrates

There has been one more subscription, so the total is 32 now. There was a surprise international TNT bill who charged £70. This shows that we should also provide participants with guidance on how to pack their samples. **Action David H together with Myles and Paul Mcilwaine (CEFAS) to come up with transport guidance of samples.**

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	-	-	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
	21	9	4	31

2. 2014-2015, Year 21 Operations

The 2014-2015 timetable has been created, sent to participants and posted on the scheme website. The first circulation of BI exercises (RT, LR, MB & OS modules; RT47, LR19, MB22 & OS56-58) was completed in line with the timetable. Returns and results are summarised in the table below.

Exercise	Status	Returns / Comments
RT47	Samples distributed 15/09/14 Exercise active	General Ring Test 0 out of 21 returns
RT48	Samples to be distributed 04/12/14 Exercise in preparation	Targeted - TBC
LR19	Request for specimens distributed 15/09/14 Exercise active	General 0 out of 9 returns
MB22	Samples distributed 15/09/14 Exercise active	Marine Sample (1mm) 0 out of 4 returns
OS56 - 58	Samples requested 15/09/14 Data submission deadline has passed, 26/09/14 Sample submission deadline set at 31/10/14 Exercise active	23 out of 31 lists of samples 23 out of 31 datasets received 0 out of 93 samples received

a. Issues arising

The bulk of electronic files with files from previous years of scheme operations have been received. These will help to ensure consistency with previous scheme years and assist with the production of annual reports and assessing long term trends. However, the NMBAQC Scheme MS Access database file is still outstanding.

Outstanding Year 20 (2013-2014) Own Sample and Laboratory Reference modules are beginning to seriously overlap Year 21 (2014-2015). Participants have been enquiring about these outstanding exercises.

3. Taxonomic Workshops

A benthic invertebrate expert workshop is planned for w/c 10th November 2014 at Dove Marine Laboratory, Cullercoats. The confirmed programme comprises three days for sabellids and fabricids (Prof Adriana Giangrande, Lecce University, Italy) and one day for interstitial opisthobranchs (Dr Bastian Brenzinger, Bavarian State Collection of Zoology, Munich, Germany). The workshop has been advertised via direct email, the NMBAQC website, the Linnean Society and the APEM website; the workshop is currently oversubscribed. When final travel costs are available for the session leaders, a detailed workshop budget will be supplied to the Finance Manager.

Idea: Expert invertebrate workshops once a year, beginner's on request

This would be dependent on having enough interest to run another expert workshop and the availability of sufficient relevant experts. Alternative locations for holding such a workshop would be Queen's University, Bangor University and Millbrook Marine Station.

Variation in assignment of juveniles

Matt has had some responses to his question about assignment of juveniles. There is no standard protocol, some labs use specific size limits, others will include juveniles if there are lots of adults around, and some use a percentage of the adult size as a juvenile assignment. Also, sometimes juveniles are taken to a higher taxonomic level (genus instead of species) and this can also throw the biodiversity assessment, e.g. for inclusion in the IQI tool. We should standardise the assignment of juveniles now to make it futureproof for classification purposes. For the WFD you would also like to perform a multivariate analysis. **Action Matt to ask for approval to use the obtained data and when approved to send the document to Tim Mackie, Tim Worsfold (APEM) and David H.**

Macroalgae (CS)

1. Macroalgal blooming/seagrass ring tests – photographs for the next RT are being collected.
2. Rocky shore macroalgae ring test – photographs for the next RT are being collected.
3. Certificates – there is a delay in producing these, due to the contractor having been on maternity leave.
4. Posters – Astrid took the hard copy poster to the Challenger Society meeting, and drummed up more interest in the zooplankton RT. Astrid did sterling work on turning it into an e-poster, which was run at the MASTS (Marine Alliance for Science and Technology for Scotland, includes most of Scotland's universities) Annual Science Meeting in Edinburgh in September. There were 300+ people signed up for the meeting overall, but no definite expressions of interest in taking part, though some people took copies of the leaflet. The poster, e-poster and leaflet (A4 size) files are available to download from the Committee part of the NMBAQC website. **Action Astrid to send electronic copies of the posters/flyers to Grant, Sarah and David H.**
5. SEPA has been asked to do something on quality management for the MASTS Graduate School in March, so I will emphasise NMBAQC at that.
6. Saltmarsh plants ring test – the EA/CEH ring test was run in August at a cost of £230 per person. There was a very short timescale for both downloading the test, and for returning results, although CEH were flexible about this. Still awaiting results. **Action: Clare to provide feedback to Mandy**
7. MAB/Seagrass workshop – this is still needed, so I'd like to plan one for next spring time. Any thoughts on how to fund this would be appreciated so attendance costs aren't prohibitive. Revision of the draft spec is also needed, so feedback from Committee members with an interest in this would be appreciated. **Action Clare to resend the draft to the committee - Done.** The Irish EPA have offered to lend us their hovercraft if it is being held in Ireland, but two Welsh sites have also been proposed. Possible options for funding are: the European Marine Fisheries Fund, Euromarine (**Action Clare S to contact Claire M to investigate this**), and collaboration with National Resources Wales (**action Clare S to liaise with Matt G**). **Action: All to feed back on the seasonality of sites and what can be found there to Clare so she can make an informed decision on when and where a good location for the workshop would be; a trial size would be sufficient.** The workshop will focus on macroalgae and seagrass, which use the same methodology, and is likely to be planned for April/May 2015. The EA is developing and trialling a tool for sublittoral seagrass, but there is no update on this.

**Contractor's update Thomson Ecology
Fish update**

2014 / 2015 Participation

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		
2125		x
2126		x
2127	x	x
2128	x	
2129	x	
TOTAL	22	17

(List correct as of 6th October 2014)

Sarah mentioned that there should be one more participant coming for the Fish Reverse Ring test.

Progress on circulations

Scheme Year 20 (2012/13)

Exercise/ Reports	Status	Returns/Notes
FRR05	Re-analysis of fish taxa completed. Completed and published.	<u>Fifteen fish taxa to be from Northwest European waters</u> (CSEMP samples where appropriate).

Exercise/ Reports	Status	Returns/Notes
FRT07	Deadline for returns 04-04-14. Completed and published.	<u>General Fish Ring Test</u> – Assorted Fish Taxa (fifteen taxa).
Annual Fish Report	Completed and published.	Report writing will start upon completion of analysis and reporting on FRT07.

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. Completed	<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. Cancelled for this year. To plan workshop for 2016.	2.5 days, 12 participants Lead/support: Steve Coates & Peter Henderson

Sarah has also made an effort to get IFCAs to sign up to the scheme, however, without success. The committee suggested also trying to get the fisheries labs to sign up to the scheme, e.g. the Welsh Fisheries Management Laboratories.

The fish workshop was cancelled, as most people had already signed up for the accredited fish workshop run by IFM. Also the flyer distributed for sign-up stated the wrong year (2015) for the workshop date. **Action Sarah to find out how this workshop is accredited, and to find out if it is possible to collaborate, find a model that works for both IFM and NMBAQC together.**

Zooplankton update

Astrid circulated a signup document for the Committee to comment on. The trial zooplankton ring test is nearly ready but we now need to get people signed up. One of the comments made was that the workshop should not be held on a Monday as this would mean that participants would have to travel on a Sunday. It was regarded better to have the workshop on a Tuesday afternoon to a Wednesday afternoon.

AOB

Contractors' representative

Grant had a few queries regarding the year 20 benthic inverts Own Sample results. Myles responded to say we will be sending out a communication soon with an update on the progress.

WORMS alignment

The committee has always endorsed WORMS although other systems such as UNICORN and Marine Recorder are also being used. Merman is also based on UNICORN and the EA use BIOSYS together with Marine Recorder. WORMS uses Algaebase for algae. Algaebase is

updated as and when so lists may change anytime; it's not clear how often WoRMS takes updates from Algaebase. Action: CS to find out.

Persuading Universities to becoming NMBAQC participants

This fits in with Sarah's attempt to get IFCAs to sign up, and Clare S liaising with the MASTS Grad School. Clare S has already presented a poster at MASTS and Astrid at Challenger. It would be good if we could produce a 'Teaching Aid', an hour ready-made lecture on the importance of QA in marine analysis, which can then be distributed to universities for inclusion in their curriculum. Another option would be to hold a presentation at the Porcupine conference, or the Marine Measurement Forum.

Logo use

Astrid has had a query on the use of our logo, what is the current protocol? As long as the organisation is a current participant they are entitled to use the logo and state that they are a participant in the scheme. Action: Myles to send the current protocol to Astrid.

Remedial Action

Astrid has had a query from the EA on the remedial action guidelines and has been asked to clarify these. The committee is happy with the change and Astrid will incorporate this. Action: Astrid to update the document by David H with the new remedial guidelines. Action: David H. to update the Benthic Invertebrate Guidelines for next year.

Participation level

Myles was contacted by Roger Proudfoot from HBDSEG to discuss participation levels for the Own Sample test. Currently this stands at 3 samples per organisation, but it was suggested to change this to 5% of total samples, or 3 samples, whichever is greater. The committee agreed this would be a good idea to take forward for directly contracted work, but not for work contracted elsewhere.