

## **The NMBAQC Scheme – Setting the record straight.**

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The Summer 2008 PMNHS Newsletter (No.24) contained an article by Peter Garwood raising his concerns about some aspects of the Invertebrate Component of the BEQUALM / NMBAQC Scheme. In the Winter 2008/09 PMNHS Newsletter (No.25) I addressed these issues in some detail in a Porcupine Piece – “The NMBAQC Scheme – Friend or Foe to the Benthic Ecologist”. My aim was to explain and clarify the purpose of the scheme, to dispel some of the misunderstandings which have arisen, and to extol the scheme’s benefits to participants.

The most recent PMNHS Newsletter (Summer 2009, No.26) includes a response to the original Peter Garwood article by Roger Bamber which echoes Peter’s views with various denigrations of the NMBAQC scheme. Regrettably, Bamber’s response makes no reference whatsoever to my own explanatory “Friend or Foe” piece and I must assume that it was written beforehand. This is unfortunate as many of the same issues are raised and I have already dealt with these at some length. Indeed, confusion, misconception and disingenuous use of language seem to be the order of the day when critics of the NMBAQC scheme put pen to paper. Whilst they are entitled to their own perceptions, the reality of the scheme has always been open and transparent and the concerned taxonomist should be directed to the scheme’s web site; <http://www.nmbaqcs.org> where the history of the scheme, its rationale, aims and much, much more, are writ large.

In essence Bamber’s contribution, however well intended, is perpetuating misinformation about the scheme and it is necessary to clarify some matters once again. Moreover, Bamber makes additional inferences that the scheme operations may in some instances be contrary to trade laws. These views are erroneous and should not go unchallenged.

### **Clarifying the role of the NMBAQC Scheme.**

Let me start by re-iterating the purpose of the NMBAQC scheme. It is a quality assurance scheme created for the UK CMAs (Competent Monitoring Authorities e.g. EA, SEPA, NIEA, CEFAS, JNCC, CCW etc.) to provide quality assurance (QA) for marine biological data collected by, or on behalf of, CMAs. The scheme operates via a committee comprising representatives of the CMAs (and of participating consultancies) and reports to the Healthy and Biologically Diverse Seas Evidence Group (HBDSEG) which forms part of the UK Marine Monitoring and Assessment Strategy (UKMMAS).

The NMBAQC scheme is not, never has been, nor has it portrayed itself as, an accreditation or qualification scheme. Any participants who might claim to be “accredited or qualified” through the scheme are asked to withdraw such inferences. However, the scheme does encourage participants to seek accreditation in the knowledge that it improves QA and accreditation bodies routinely seek evidence of the very type of external QA provided by the scheme. Nevertheless, as it has been

made abundantly clear that the NMBAQC scheme itself is not an accreditation scheme then Bamber's monologue on the validity of the scheme with respect to accreditation is entirely irrelevant and should be summarily dismissed.

### **The NMBAQC scheme's operation and quality stance.**

The QA exercises undertaken within the scheme are for the purposes of training or sample auditing to determine sources and levels of error in randomly selected samples from CMA monitoring programmes. The exercises for the Invertebrate Component are undertaken on behalf of the CMAs by a contracted administrator (currently Unicomarine Ltd). The suggestion that this arrangement "infringes competition laws" and is "legally unacceptable" is mischievous and runs counter to legal opinion received by the NMBAQC committee.

Bamber's objections probably stem from misunderstandings of the scheme's actual operation, perhaps based on the perception that the scheme administrator could use their position to gain commercial advantage. However, the administrator is bound by confidentiality regarding participant identities and cannot utilise any information on individual participant performances. Note that the performance of CMAs within the scheme is available from the CMAs under the Freedom of Information Act (FoI). The administrator could gain some knowledge of faunal diversity of particular areas from submitted datasets (for Own Sample audit exercises) which might be advantageous if tendering for work from those areas. However, the scheme deals mostly with CMA surveys (or licensed surveys) from which all data is subsequently publically available under the FoI Act. Participants processing non CMA surveys join the scheme entirely under their own volition and, if need be, are able to withhold any sensitive datasets. Similarly the administrator might gain some advantageous knowledge of specific taxa from submitted reference or voucher specimens (from the Lab. Ref. exercise) but the aim of this exercise is simply to provide a second opinion from an experienced taxonomist with access to a wide range of UK voucher material. Submitted material arrives unverified and neither the participant's nor the administrator's determinations should be viewed as validations by a recognised expert.

The scheme does not claim to be authoritative and there is no presumption that determinations made by the administrator on audited samples or submitted voucher material are in any way certified or indisputable. Participants are encouraged to feedback on mismatches and the opinion of a recognised expert, external to the scheme, may be sought on occasion. The NMBAQC committee act as an arbiter, if required, in any such deliberations, especially for issues concerning CMA data. However, it would be quite misleading to suggest the scheme adopts an authoritative approach. The scheme's administrator, in collaboration with the committee, acts more as a mentor helping the participants minimise sources of error with the express purpose of achieving the quality standards which are set by the committee to fulfil the requirements of the legislative drivers under which the work is undertaken.

The NMBAQC scheme is a key part of QA but does not claim to be the acme of quality. To harp on that "many 'outside' organisations work to higher quality standards" misses the point. Many of the CMAs also have additional QA in place with their own internal QA, along with ISO certification and UKAS accreditation. NMBAQC participants are encouraged to develop in-house QA and to seek

accreditation. However, even with all of these in place, NMBAQC participants, including CMAs, still sometimes fall a little short of quality targets and have to implement remedial actions. Quality is a process of continuous learning for all field operatives and lab analysts – not a one-off certificate or qualification for an individual.

It is also rather disingenuous to refer to “numerous mis-identities within the scheme over the years” implying that such occasions are frequent and unaddressed. There are, and will continue to be, on-going debates within the scheme about the taxonomy of a small number of groups. In fact, exercise results are discussed in detailed bulletins available for all to see on the website. This is part of the learning process and if you don’t keep abreast of such discussions you don’t move forward.

### **The origin of the NMBAQC Scheme and the Quality Imperative.**

The Invertebrate Component of the scheme derives, as Bamber correctly pointed out, from a standardisation exercise developed for the UK National Marine Monitoring Programme (NMMP) in the early 1990s. I appreciate that not everyone remembers the days of the original NMMP and the issues that arose due to the lack of a common standard and regional variations in taxonomic expertise. Trying to analyse the data at a national level from all the contracting parties proved problematical and the creation of a scheme to address these issues seemed eminently sensible. As I understand it, Quality Assurance QA (not accreditation) of data was not the invention of the NMBAQC, but its aspiration.

In 1996 the DEFRA Marine Environment Monitoring Group (MEMG) stipulated that monitoring agencies and their sub-contractors should participate in QA schemes and this policy was re-iterated in 2005 (56<sup>th</sup> MEMG Meeting). The NMMP was re-named the Clean Seas Environment Monitoring Programme (CSEMP) in 2006 and is just one of a number of local, national or international programmes now undertaken by the CMAs.

The European Water Framework Directive (WFD) monitoring programme commenced in 2007 and biological analysis is the key metric by which the ecological quality status of a water body is assessed and along with it, the requirement to show appropriate QA of all biological data submitted to the commission in support of an assessment. The directive requires CMAs to undertake monitoring of ecological communities including Invertebrates, Phytoplankton, Estuarine Fish, Macrophytes and Angiosperms. The directive states that *“Methods used for the monitoring... shall conform to international standards ...which will ensure the provision of data of an equivalent scientific quality and comparability”* and obliges CMAs to adopt any relevant ISO standards (Annex V, 1.3.6). The provision of internal and external QA is enshrined within the appropriate ISO standard for macrobenthos: EN ISO 16665:2005 *Water Quality – Guidelines for quantitative sampling and sample processing of marine soft bottom macrofauna.*

Hence QA must be an integral part of all WFD assessments and the NMBAQC committee was commissioned to develop QA components for the relevant ecological communities. From DEFRA’s viewpoint the Invertebrate Component has worked for over fifteen years and the expansion of the scheme under this model is well justified.

It makes no sense to restrict QA and the NMBAQC, as suggested by Bamber, to a single monitoring programme such as CSEMP (NMMP) covering only one ecological community. As far as the CMAs are concerned QA should apply to all monitoring activities and it is perfectly logical to umbrella all marine biological QA under different components of an enlarged NMBAQC Scheme. In these fiscally challenging times, the mantra of “survey once, use many times” sits comfortably with the CMAs. Being able to utilise data from surveys, regardless of their commissioning driver, allows the CMAs to fill data gaps and ensure that resources are best utilised. Remember it is your tax pounds that are paying for it.

### **The Quality Mandate for consultants and contractors.**

The CMAs when inviting tenders for analytical contracts are legally entitled to set conditions which are necessary to ensure satisfactory data quality. This could include participation in an appropriate national QA scheme or even a requirement for laboratory accreditation if that was deemed essential to meet required quality standards. It would be remiss of the CMAs not to at least emulate the minimum standards they operate in-house. Participation in an external national QA scheme, involving random audit of samples, is a mandatory minimum but is less stringent than the practice in most CMA labs. Legally speaking, consultants or contractors cannot be required to join the NMBAQC specifically but may opt for “an equivalent” QA scheme if they can find a suitable one geared towards the marine fauna of the UK or the North East Atlantic. The NMBAQC scheme was, of course, created in 1994 for the very reason that no suitable scheme then existed and it may well still be the “only game in town”. This situation might be regarded by some as a “Catch 22” legal loophole designed to entrap consultants within the scheme, but a demonstrable equivalent has, to my knowledge, not been submitted in support of a tender for CMA work. However, it should also be borne in mind that the scheme is designed to serve the needs of the CMAs and its operational overheads are also heavily subsidised by the CMAs. Any alternative scheme set up on purely commercial basis and operating the same type of QA exercises is liable to have a more onerous cost burden for participants.

In conclusion I would plea for anyone still with misgivings about the scheme to seek clarification about their issues prior to airing these in a public forum. The scheme endeavours to be open and transparent about its rationale and operation and to communicate as best it can to a wide audience, but cannot be held responsible for misinformed views held by third parties not directly involved with the scheme. The scheme administration does not contravene Restraint of Trade legislation, and procurement procedures practiced by CMAs in relation to tenders requiring QA participation are fully compliant with UK law. The scheme operates within its own financial restrictions and terms of reference set by its sponsoring body – the Healthy and Biologically Diverse Seas Evidence Group (HBDSEG). These may sometimes be at odds with the preferences of some individual participants and any such issues raised with the committee receive due consideration. It should be accepted that no scheme is perfect but the NMBAQC scheme fulfils the purposes for which it was established and is achieving its objectives as defined by HBDSEG.