



**PML**

Plymouth Marine  
Laboratory

16 September 2015

### **Questionnaire about future Nutrient CRM's in seawater**

This questionnaire is conducted as a part of the SCOR Working Group 147 ([http://www.scor-int.org/SCOR\\_WGs\\_WG147.htm](http://www.scor-int.org/SCOR_WGs_WG147.htm)) activity, a purpose of which is to encourage a broader usage of nutrient CRM's in seawater by the global ocean community. The group is encouraging the production of CRMs, which would be distributed at a reasonable price (expected price per bottle is between ¥6,000 and ¥7,000)(US\$50-US\$58, £32-£38 or 45-52 Euros), with the aim for this price to make it possible for all laboratories to be able to afford and regularly use the new CRMs. The CRMs will be distributed by the Japan Agency for Marine-Earth Science and Technology (JAMSTEC). Before the distribution, we would like to help JAMSTEC estimate which concentration and how many bottles of CRM are potentially required by the global community. Currently, we are planning to prepare CRMs of the concentrations and origins of seawater:

No.	Level and seawater	Nitrate	Phosphate	Silicate
1	Low in Atlantic	1.0	0.4	~2
2	Middle in Atlantic	~12	~0.5	~12
3	Middle in Pacific	~25	~1.5	~60
4	High in Pacific	>35	>3	>110
5	High in Atlantic	~30	~1.5	~30

Our questions are:

(Please note that this is just a questionnaire to gauge the global requirements and not any commitment to purchase !)

#1. Which CRM's would you need?

#2. How many bottles would you need for each CRM each year?

The above questions are made assuming usage in the next three years. If you need different types of CRM (different concentrations, different seawater, etc.), please let us know.

Very many thanks for your contribution to this exercise. Please fill a reply sheet and send it to us as soon as possible before 15<sup>th</sup> October 2015.

Michio Aoyama and E. Malcolm S. Woodward  
Co-chair of SCOR Working Group 147, Towards comparability of global oceanic nutrient data (COMPONUT)

**Michio Aoyama**

RCGC, Japan Agency for Marine-Earth Science and Technology  
(JAMSTEC)/ IER, Fukushima University  
Fukushima, 960-1296  
JAPAN  
Tel: +81-24-504-2882  
E-mail: [r706@ipc.fukushima-u.ac.jp](mailto:r706@ipc.fukushima-u.ac.jp)

**E. Malcolm S. Woodward**

Plymouth Marine Laboratory  
Prospect Place, The Hoe  
Plymouth PL1 3DH  
UNITED KINGDOM  
Tel: +44 1752 633100 (Work)  
Tel: +44 7887 640557 (Mobile)  
Email: [EMSW@pml.ac.uk](mailto:EMSW@pml.ac.uk)



**PML**

Plymouth Marine  
Laboratory

## Reply sheet

Please send back this sheet to Michio Aoyama, [r706@ipc.fukushima-u.ac.jp](mailto:r706@ipc.fukushima-u.ac.jp), [Malcolm Woodward, EMSW@pml.ac.uk](mailto:Malcolm.Woodward@pml.ac.uk) and Akihiko Murata who is an Associate member of the SCOR WG147 and responsible on this issue, [murataa@jamstec.go.jp](mailto:murataa@jamstec.go.jp)

Date:

Name:

Organization:

No.	Level and seawater	YES	Numbers	NO
1	Low in Atlantic			
2	Middle in Atlantic			
3	Middle in Pacific			
4	High in Pacific			
5	High in Atlantic			

Comments and requests: