

Workshop Recommendations

These recommendations are the result of discussions between taxonomic experts and contractor representatives and are grouped into four subheadings: a) sampling and processing, b) taxonomic resolution, c) technical co-operation, and; d) data access and availability.

Sampling and Preservation

- i. The workshop recommends that contractors undertake biologically focused sampling cruises and that mixed discipline cruises allocate sufficient ship berth space for biological teams and sufficient wire time to be able to extract enough samples for biology by defining an area of research - both the scientific aims and spatial extent; take samples randomly in the research area as a preliminary survey; and, analyze the samples and assess the species cumulative curve. This would make the estimation of the number of samples required to provide adequate assessment of the number of species possible. Repeated sampling to overcome any shortfall would also need to be done.
- ii. The workshop strongly recommends that ISA organize and convene a workshop on Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA) process and its application in the CCFZ and to bring together the appropriate experts as soon as was practical.
- iii. The workshop notes that box core samples for biology should not be divided into subsamples for other disciplines.
- iv. Contractors were urged to use the LTC guidelines in the processing of box core samples and that any additional sample subdivision or processing step is reported in the annual report to the ISA.
- v. Contractors were urged to take samples for molecular taxonomic analyses to support greater accuracy in biodiversity and ecological assessments.
- vi. Contractors were urged to follow the most appropriate 'cold-chain' protocol to support molecular samples
- vii. Contractors were urged to deposit all identified material (including molecular samples) in an internationally recognized museum or collections facility. The material should be freely accessible for study and be able to be sent on loan to researchers. The need for material to be archived in an appropriate collections facility should be specified in the contractor's plan of work and the contractor should identify in which facility their material will be deposited. How the transfer of taxonomic material to the collections facility will be financed should also be in the plan of work.
- viii. The workshop notes that the epibenthic sledge device should be included as part of the sampling for the baseline study.

Taxonomic resolution

- ix. Specimens must be identified to species level and follow the World Registry of Marine Species (www.marinespecies.org).

Technical co-operation

- x. The participants recommend a technical co-operation framework be established to support the following areas:
 - a. Training
 - b. Visiting-scientist programmes
 - c. Joint industry/academic partnerships
 - d. Taxonomic consistency and quality control
- xi. The participants strongly urge the ISA to develop a technical co-operation framework to enable the building of support which will be essential to advance our understanding of the risk and impacts of mining in the CCFZ.
- xii. The participants urge the ISA to establish a mechanism which would support contractors seeking taxonomic expertise – a form of taxonomic clearing house mechanism.
- xiii. The participants recommend that the Authority develop a series of inter-calibration workshops to bring together contractors with groups of taxonomists to review and assess collections made in different contract areas.
- xiv. The Authority should use the provided list of deep-sea taxonomists to create an expert panel to assist them in the assessment and validation of species level assessments as part of the annual data returns.
- xv. Encourage contractors to develop collaborations both among themselves and with relevant academic partners, to address gaps and provide consistency, particularly in taxonomic identification.

Data access and availability

- xvi. The workshop fully supports the Authority's plans to develop the existing database. We urge researchers and contractors to work with the Authority to provide expertise in developing the taxonomic modules.
- xvii. Taxonomists working on material from the CCFZ were urged to publish their data in recognized scientific journals as soon as practical.
- xviii. Participants were encouraged to facilitate the publication of Special volumes in appropriate scientific journals, such as ZooKeys (<http://www.pensoft.net/journals/zookeys/>) and Zootaxa (<http://www.mapress.com/zootaxa/>), to enable taxonomists to describe the fauna of the CCFZ as soon as sufficient material is available.