

**TEMPLATE FOR SUBMISSION OF TEXTUAL PROPOSALS DURING THE 27TH SESSION: COUNCIL -
PART III**

Please fill out one form for each textual proposal which your delegation(s) wish(es) to amend, add or delete and send to council@isa.org.jm.

1. Name of Working Group:

Protection of the Marine Environment

2. Name(s) of Delegation(s) making the proposal:

Deep Ocean Stewardship Initiative and The Pew Charitable Trusts

3. Please indicate the relevant provision to which the textual proposal refers.

New Annex on Reference Zones

4. Kindly provide the proposed amendments to the regulation or standard or guideline in the text box below, using the “track changes” function in Microsoft Word. Please only reproduce the parts of the text that are being amended or deleted.

Annex [XX]

Applicants must establish suitable and effective Impact reference zones (IRZs) and Preservation reference zones (PRZs) in order to monitor the environmental impacts of their activities. The following parameters shall apply in the designation of IRZs and PRZs.

1. IRZs and PRZs must be situated within the Contract Area (and the Contract Area may need to be selected around the need for appropriate IRZ/PRZs, especially where multiple or large reference zones are required).
2. The applicant needs to demonstrate that the IRZ/PRZs are ecologically similar before the commencement of mining.
3. IRZs must be zones where direct impacts from mining are predicted to occur once mining commences.
4. For each type of impact identified in the environmental impact statement, there must be at least one corresponding IRZ which will enable the Contractor to monitor that impact. This is likely to require multiple IRZs (or a very large IRZ).
5. The area(s) of the IRZ(s) needs to be sufficiently large and representative to allow adequate assessment of recovery of populations and environmental conditions after the mining activities, in accordance with the relevant Standards, taking into account relevant Guidelines.
6. PRZs will be important in identifying natural variations in environmental conditions against which impacts shall be assessed and must be comparable to that of the impacted areas, in accordance with the relevant Standards, taking into account the relevant Guidelines. The abiotic and biotic baseline data include, but are not limited to the quantity and quality of mineral resources, species composition and habitat types.

7. PRZs must be areas that will not be impacted by mining activities from any contractor, including impacts from operational and discharge plumes and including during the post-closure period. PRZs must also be free from impacts of other industrial activities.
8. Where a Contract Area consists of several disjunct sub-areas that are isolated from each other, then each of those areas would require a corresponding PRZ and IRZ.
9. Use of multiple PRZs and IRZs should be considered for increase in statistical rigour, and chance of detecting effects and adding redundancy in case of unexpected variation/plan changes.
10. The area of the PRZ needs to be sufficiently large to contain sufficiently large populations to guarantee long-term survival. The PRZ will also require a buffer zone around it to protect the populations and ensure maintenance of natural environmental conditions in the PRZ.
11. Abiotic and biotic parameters, within the IRZ and PRZ will need to be monitored to quantify impacts. This includes but is not limited to monitoring species diversity and function. To establish an adequate baseline and to find suitable indicator species (e.g., the sensitive species that will suffer most from an impact, key-stone species that are crucial for ecosystem processes, or species which abundance indicates a disrupted ecosystem functioning), it will be necessary to catalogue most species in the IRZ and PRZ in question and unravel their functions. This will require sufficient sampling effort to collect sample sizes that allow for a meaningful comparison (i.e., with high statistical power).
12. The longevity of PRZs is important. The duration of post-mining monitoring should last until no measurable difference between IRZ and PRZ can be detected anymore.
13. Isolation of PRZs is important. Any PRZ will by definition have to remain unimpacted throughout the post-mining monitoring period.
14. To designate representative IRZs/PRZs requires characterisation of the pelagic and benthic environment including all sub-habitats that may be impacted by mining operations, and determination of regional distributions and patterns of connectivity of communities. Temporal variation must also be evaluated over multiple years.
15. An applicant will need to be able to demonstrate knowledge of species' ecological requirements (e.g. for successful reproduction); an average population density alone will not suffice.

5. Please indicate the rationale for the proposal. [150-word limit]

IRZs/PRZs are crucial environmental management tools, and an effective way to measure the environmental impacts of seabed mining on the ecosystems. But the ISA currently has no binding rules in place for their identification, design, establishment and review by mining operators.

DOSI and Pew wish to stress the urgency of this matter. Exploitation activities cannot commence without these tools. Indeed, IRZs and PRZs should already be designated during the exploration phase as contractors will need to create robust environmental baselines in the IRZs and PRZs during the exploration phase. The reference zones are then needed to assess the impacts of test mining under an exploration contract and/or prepare an environmental impact assessment for an exploitation application. In order to avoid any doubt and in the interest of safeguarding against any potential gaps between the exploration and exploitation phases for any given mining operation, we suggest the insertion of the above additional Annex to the Exploitation Regulations as provisional ideas for parameters for IRZ/PRZ design.

Points 1, 3 to 5 and parts of 11 and 12 in the proposed text above are derived from the current LTC Recommendations (Exploration) (https://isa.org.jm/files/files/documents/26ltc-6-rev1-en_0.pdf), and this proposal generally builds upon the ISA's Technical Study no. 21 and the work

done at the ISA's 2017 workshop (on the Design of IRZs and PRZs in Deep Sea Mining Contract Areas).

Key points that the proposal seeks to cover are that IRZ/PRZs should be located within a contract area. IRZs will be needed both within, and outside of, the direct mining area. For monitoring of direct mining impacts as well as of indirect impacts such as for example sediment plumes.

PRZs must be protected from any mining impact, including during the post-closure period. Species composition, habitat types, ecosystem services, and occurrence of mineral resources in a PRZ must be comparable to that of the impacted zone as such we would recommend the ISA produce further guidance (e.g. in Standards and Guidelines) about what constitute adequate comparability between areas, in order to ensure that the IRZ/PRZ regime is effective, as well as to provide regulatory certainty and a level-playing field across contractors. The number of PRZs should be adequate to allow appropriate statistical analyses. This number will depend on the natural variation in environmental and ecological parameters and can only be determined through baseline data collection. Types and frequency of baseline and monitoring studies on the seafloor, in the water column, and above the ocean in the area of ship operations should be specified in the ISA's regulations. Importantly, where contract areas are made up of several small, fragmented areas, the Annex should specify that each would require a separate PRZ and IRZ. Finally, the Annex should specify that a PRZ needs a buffer zone similar to the buffers around Areas of Particular Environmental Interest (designated in the regional Environmental Management Plan for the Clarion Clipperton Zone).