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To:

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05 May 2015 09:38

Hello:

My comments on the report are below. I'm very sorry but I am on a ship right now and they do not permit the sending out of attachments so I could not follow your instructions to submit as a word document. Hopefully you will be willing to take these comments as text in an email.

Chris

My name is Christopher Kelley. I am the program biologist for the Hawaii Undersea Research Laboratory at the University of Hawaii. I am also graduate faculty for the Department of Oceanography and affiliate faculty for the Hawaii Institute of Marine Biology. I was also one of the co-authors of an ISA supported technical report on the biological communities on mn crusts, which was subsequently published as a journal article. I have recently been asked to serve as the lead scientist for the Office of Ocean Exploration and Research (OER)'s 3-year project in the Pacific involving the NOAA ship, *Okeanos Explorer*. A priority of this project will be the discovery and documentation of mn crust communities, particularly large scale, high-density coral and sponge communities, in what Jim Hein has described as the Prime Crust Zone (PCZ). The ship has a 6000 m ROV and our 2015 ROV cruises will be in the Hawaiian archipelago and the Johnston Atoll monument. The 2016 cruises will focus on the Wake and CNMI monuments in the western Pacific. The ROV video will be broadcast live via telepresence over the internet. If the ISA is interested, I can provide additional details.

The following are my comments regarding the report

Page 31: Restoration and rehabilitation of the marine environment

Specific Elements:

A general restoration obligation where restoration is feasible seems appropriate.

Commentary/Suggested Content

- To include a general restoration obligation. Restoration to occur where directed to do so by the Council. This would be based on the Commissions' recommendations that

would take account of the likely effectiveness of techniques based on necessity; technical feasibility; and cost-efficiency on the basis of a cost benefit analysis, where such quantification can be reasonably assessed.

- Restoration will also be impacted by “passive rehabilitation”, that is, the ability for natural recovery to occur.
- “Restoration” & “rehabilitation” will require appropriate legal / scientific definition in a marine environment context.

My Comments regarding this section

Stating there will be a general restoration obligation where restoration is feasible is useless because restoration will not be feasible in most if not all cases due to depth, technical challenges, and cost efficiency. Given how long the communities at these depths take to develop (hundreds if not thousands of years), natural recovery for all intents and purposes will also not occur. I would suggest honesty here and clearly state that restoration efforts in most cases will likely be infeasible.

The ISA’s focus should be on the protection of sensitive and important deep sea biological resources, which would include identifying the location of important communities, which in my opinion are large scale, high-density invertebrate beds, particularly corals and sponges. These areas, whether you choose to call them vulnerable marine ecosystems or not, should clearly be designated as off-limits to mining activities. Evaluation of sediment plumes created by mining activities should also focus on minimizing their impacts to these areas as well.

Page 51: Effective protection for the marine environment from harmful effects

- Specific criteria and guidance must be developed for concepts such as “significant adverse change” and “vulnerable marine ecosystems”.

My Comments

Given that mn crust mining activities will essentially remove the top surface of the substrate and everything growing on it, it will most certainly create a significant adverse change to the area that is mined, not matter how you define it. Again, my point is that minimizing impacts should be based entirely on where mining is allowed to take place. The ISA should focus all of its environmental efforts on identifying sensitive communities and steering mining activities away from these communities. Regarding the definition of “vulnerable marine ecosystems”, I would recommend you distinguish them by mn crust, mn nodule, hydrothermal vents, etc, since these are all completely different substrates with very different communities. For mn crust communities, which

are a research interest of mine, I would focus on sessile filter feeding invertebrates, particularly corals and sponges. These cannot swim away or avoid either mining gear or the plumes they create. The most vulnerable of these would be what we believe are the relatively rare high density communities occurring between 1000-2500 m that we are currently trying to understand better.

Additional Information

You have my consent to make my personal details and comments publicly available. I am also interested in remaining in contact with the ISA regarding this report, the framework it is describing, and any other issues regarding deep sea mining, particularly manganese crust mining.

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