

## ***Interactive comment on “Detecting marine hazardous substances and organisms: sensors for pollutants, toxins, and pathogens” by O. Zielinski et al.***

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This paper represents a lengthy review of the range of sensors available for detecting marine pollutants, toxins and pathogens that may present hazards to the marine environment. Initially the scope of marine health hazards to be considered in the review is defined. The current status of health hazard detection systems addressing a range of space scales from large (i.e. remote sensing), intermediate (e.g. in situ platforms) and small scales (in situ point measurements) is then reviewed in detail. Under each of these space scale headings, marine pollution, marine toxins and toxigenic organisms, high biomass harmful algal bloom organisms and marine pathogenic agents

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are considered. A useful section on gaps in health hazard detection is also included which sets an agenda for future research and development. The review is generally well written, presents a wide scope of coverage and is comprehensively referenced. The review is a useful addition to this special edition of Ocean Science Discussions and I recommend it be published subject to a few minor corrections/additions. Table 1 could include more details of the YSI probes for chlorophyll and phycoerythrin fluorescence /oxygen/turbidity sensors. Page 967 line 16 suggested change “hardened” to “robust” Page 972 line 10 change “quatitation” to “quantification” Page 973 line 18 change “moorage” to “mooring” Page 975 line 3 insert space between “chlorophyll” and “a” Page 980 line 24 more details of “Cytobuoy” could be included e.g. more recent publication (Thyssen et al 2008 Journal of Plankton Research 30, 333-343) and could be added to Table 1.

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