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Individual SASI model comments

This Committee member wants to state that he unequivocally agrees with the recommendations made in the report on the SASI model. The model is an important new tool that provides objectivity in the management of fisheries. It should, however, not be considered as the final answer for evaluating trawling impacts but simply as another way to assist in making carefully considered decisions that aim to protect habitat while enabling the sustainability of a fishery.

As useful as the model might be for guiding management discussions and decisions, the Committee report points out some areas of concern and highlights areas of future research that will improve our understanding of the ecological consequences of trawl fisheries. For example, the scale of resolution for the model is a function of the VTR data, which limits the potential disaggregation of data to 100 km². Broader scale oceanographic features, such as tidal currents and oceanic ridges can have profound impacts on the distribution of fish. Conversely, individual fish associate with very fine scale habitat features. Temporal scales can also create benthic variability on myriad scales ranging from daily to seasonal to yearly, decadal and even multi-decadal change. Spatial resolution and scale factors impact fish productivity and a better understanding of these topics should be incorporated into a revised SASI model as information becomes available.

Susceptibility of the benthic community and recovery rates are currently based on the best available information from the literature, as well as professional judgment, but, like resolution and scale factors, it is important to put these in perspective relative to trawling intensity and the natural level of disturbance observed in the different areas. There is also a need for a better understanding of how recovery from trawling depends on the measures of 'energy' for each habitat. What constitutes a modest natural disturbance in one area could, for example, be devastating elsewhere. This is inadequately understood and to define it, in a quantitative sense, so that the relative importance of natural versus anthropogenic disturbances can be teased out in a model predicting the impact on habitat structure and stability is work that needs to be undertaken.

There is generally a lack of comprehensive data on benthos and benthic communities, and what does exist is more historical than recent in nature. It is often assumed that benthic communities remain constant over time and, although this may be true in some environments it is certainly not a universal truth. Strong seasonal changes in the benthos as noted above will have a huge impact on fish utilization of an area, for example as spawning sites or as juvenile fish refuge. This dynamic is not currently incorporated in the SASI model due to lack of

sufficient information. Biogenic habitat features may be more important than general geological features in influencing fish behavior and distribution so this kind of information needs to be generated and then incorporated into the model. Bearing in mind that geological data are currently used as a proxy for habitat in the SASI model, which is reflection of the lack of benthic community data, more biological information needs to be collected and benthic processes better understood.

Finally, from a practical and fishing perspective, gear impact research could also be expanded by NMFS, perhaps through cooperative studies, to explore some of these scale, susceptibility and recovery issues. In the previous decade there was significant effort expended on reviewing the impacts of fishing gear on the benthos, but as pointed out in the committee report, relatively little direct experimental work was carried out to better understand the dynamics, both immediate and longer term, of trawling on the seabed. This area of research should be revived and supported to better understand how benthic communities respond to varying degrees of trawling and to gain an appreciation of how anthropogenic disturbance compares to natural, storm driven, disruption of the benthic community and, ultimately, how these two types of disturbance relate to fishery productivity.