

## BRAINSTORMING SESSION: ACTIONS FOR THE FUTURE

*Discussion Leaders and Rapporteurs – Michael Laurs and George Watters*

The Workshop concluded with a brainstorming session in which participants considered what actions would facilitate production of environmentally explicit stock assessments. The following list identifies those actions (the order of items in the list does not imply priority).

- Policy makers need to be made aware that additional resources (*e.g.*, personnel and data collection efforts) will be required to fully develop environmentally explicit stock assessments.
- Policy makers need to be made aware that there is a need for long-term, integrated monitoring of the marine environment. Particular care should be taken to preserve environmental data that are collected and assimilated outside of the NMFS, and, in this regard, it would be useful for the NMFS to identify those data, including output from climate models, that are appropriate and useful for stock assessments.
- Policy makers may require additional awareness regarding the potential importance of using environmental data to reduce uncertainty inherent in management advice as well as understanding that using environmentally explicit stock assessments cannot substitute or makeup for poor and lacking biological data.
- There should be follow-up additional workshops dealing with building environmentally explicit stock assessments as well as rotational assignment programs. It may also be useful to invite experts outside of the NMFS (*e.g.*, climate modelers from other NOAA line offices and academia) to follow-on workshops.
- The NMFS should develop a few case studies of environmentally explicit stock assessments. These case studies should be applied in a “team approach” that involves oceanographers, assessment scientists, and others. The development of such case studies could provide guidance to facilitate more general expansion of environmentally explicit assessments.
- The NMFS should capitalize on the FATE (Fisheries and the Environment) program during the development of environmentally explicit stock assessments.
- The NMFS needs to identify regional sources of environmental data and facilitate access to these data (probably through a well-designed and linked set of web servers). This effort could help stock-assessment scientists identify where environmental data are located, what data are available, and evaluate what data might be useful. Examples of such data servers include the Live Access Server at [www.pfel.noaa.gov](http://www.pfel.noaa.gov).

# SOUTHWEST FISHERIES SCIENCE CENTER

NATIONAL MARINE FISHERIES SERVICE - SOUTHWEST FISHERIES SCIENCE CENTER - PACIFIC GROVE LABORATORY

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## PROCEEDINGS OF THE NMFS WORKSHOP ON BUILDING ENVIRONMENTALLY EXPLICIT STOCK ASSESSMENTS

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George M. Watters

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