

Session 6. Summary

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The single paper presented in this session reviewed gaps in our knowledge about seamount populations, discussed the reasons for enhanced productivity over seamounts including Taylor column formation, and looked at potential recruitment mechanisms of demersal populations. Much of the presentation addressed future research directions including resource-associated questions and mechanistic questions.

Resource issues that need to be addressed include research on stock structure, reproduction and behavioral biology, life history, and population assessment. Furthermore, research must be conducted to gain a better understanding of the trophic relationship of pelagic and demersal species.

Mechanistic questions would address such problems as factors important in maintaining large populations on seamounts, sampling strategy to measure physical parameters, and determining primary and secondary productivity and their variability in the vicinity of seamounts.

During the ensuing discussion, a question posed was whether studies should be concentrated on extreme edges of seamount chains or on all of them within the chain. The reply indicated that research should be centered around several seamounts in one area of the chain rather than to confine it to the extremes or to expand the investigation to try to cover everything within the chain. From the standpoint of physical oceanographic research, it was brought out that good results could be obtained from sampling just two or three selected seamounts which would provide comparative data on different kinds of interaction one is likely to see between currents and seamounts.

Discussion brought out that seamount investigation should not be construed as research on an isolated ecosystem. Rather, the investigators should include other seamounts to get an accurate picture of the total ecosystem in the vicinity of seamounts. In describing

where pelagic armorhead and alfonsin would fit into the ecosystem, it was suggested that these two species would probably be included in a demersal-benthos ecosystem.

A question of whether pelagic armorhead is epipelagic or meso-pelagic stimulated much discussion. Small to large pelagic armorhead can be found at shallow depths of less than 200 m in the pelagic environment. This brought out a question of whether "fat" fish can be actually thought of as pelagic, as advocated by the hypothesized life history and also whether lean fish are pelagic at some point. Sasaki replied that he did not think that "lean" fish were in the pelagic phase.

Attention was then focused on prey items of the pelagic armorhead and alfonsin. Because many prey items were also found associated with the deep scattering layer, it was pointed out that both species can obtain food energy from the pelagic as well as the benthic regime.

It was also brought out that juvenile pelagic armorhead have been found in dense aggregations by whaling ships in the Gulf of Alaska and that stomach contents from whales included this species. It was suggested that in studying the transfer of energy among seamount-associated resources, a more productive approach would be to back calculate the biological production from higher to lower trophic levels than vice versa.

The discussion session was also opened to allow a brief presentation of the results of a study on aspects of seamount ecology in waters off the Southern California Bight and in the mid-Pacific. Genin reported that the physical phenomena induced by the presence of a seamount would primarily affect the benthic and epibenthic communities on these and adjacent seamounts rather than the local epipelagic realm. Intense current sweeping past the seamount summit would prevent sediment accumulation but would enhance the filtering rate of suspension feeders which dominated the benthic community over the seamount.