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The influence of large seamounts on ambient oceanic biological, physical, chemical and geological environment was the focus of the "Flow Over Abrupt Topography" (TOPO) ARI . The research reported here comprised the water column zooplankton ecology component of the ARI. Our field program (1989 to 1991), centered on Fieberling Guyot (32° 25'N, 127° 47'W), with three other seamounts investigated: Dowd Guyot (13° 27'N, 119° 53' W), Northeast Bank (32° 20'N, 119° 37'W) and Sixtymile Bank (32° 05'N, 118° 15'W). Support for the studies at the latter two seamounts came from the United States-Israel Binational Science Foundation.

The zooplankton studies tested three hypotheses: 1) mesoscale patches (gaps) of reduced numbers of migrating zooplankton occur over seamounts; 2) these gaps increase the patchiness of migrating species in the surrounding waters; 3) increased numbers of empty and partly empty exoskeletons (carcasses) of crustacean zooplankton occur throughout the water column over submarine elevations shallower than about 500 m.

Hypothesis 1 was supported by the data for most zooplankton, not just migrators (Genin et al, 1994). Hypothesis 2 has not been falsified by our analyses to date, but the sampling appears to have been insufficient to verify it. Hypothesis 3 was shown to be true at some of the seamounts some of the time--the phenomenon appears to be highly variable in space and time.

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FINAL TECHNICAL REPORT

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10/01/88 - 09/30/90	$ 92,084
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PAPERS SUPPORTED BY CONTRACTS:

Haury, L.R., C. Fey, G. Gal, A. Hobday and A. Genin 1995. Copepod carcasses in the ocean I. Over seamounts. *Marine Ecology Progress Series* **123**:57-63.

Genin, A. and L.R. Haury, L.R. 1995. Copepod carcasses in the ocean I. Near coral reefs. *Marine Ecology Progress Series* **123**:65-71.

Haney, J.C., L.R. Haury, L.S. Mullineaux and C.L. Fey 1995. Seabird aggregation at a deep North Pacific seamount. *Marine Biology* **123**:1-9.

Haury, L.R. and H. Yamazaki 1995. The dichotomy of scales in the perception and aggregation behavior of zooplankton. *Journal of Plankton Research* **17**:191-197.

Genin, A.C., C. Greene, L. Haury, P. Wiebe, G. Gal, S. Kaartvedt, E. Meir, C. Fey, and J. Dawson 1994. Zooplankton patch dynamics: daily gap formation over abrupt topography. *Deep-Sea Research* **41**:941-951.

Haury, L.R. and J.A. McGowan In Press. Time-space scales in marine biogeography. In: *UNESCO Technical Papers in Marine Science, Pelagic Biogeography.*

Haury, L.R., A. Genin, and C. Fey In Final Prep. Zooplankton around four eastern North Pacific Ocean seamounts. *Progress in Oceanography.*

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