

CHANGES IN ASSEMBLAGES OF OSTRACODA AND FORAMINIFERA
ACROSS A SALINITY GRADIENT IN LOWRYS BIGHT, BELIZE, C.A.

HAWTHORNE, J.*; BISCHOFF, W.D.; and BURKE, C.D., Dept. of Geology,
Wichita State University, Wichita, Ks, 67260-0027, U.S.A.

Ostracodes and foraminifers from Lowrys Bight, Belize C.A. were extracted from eight surface sediment grab samples collected along a spectrum of fresh to brackish environments (salinity ranges from 2 to 12 ppt) from the mouth of John Piles Creek into Chetumal Bay. Populations of these taxa, ornamentation and sediment composition were analyzed along this environmental gradient. Results indicate that the ostracode assemblages consist of predominantly *Cyprideis americana*, *C. salebrosa*, *Pteratocytheridea setipunctata* and *Perissocytheridea subrugosa*. However, the distribution of these species tends to show a decrease in the abundance and nodosity of cyprideids and increase in abundance of *P. setipunctata* as salinity increases bayward. Nodosity of cyprideids decreases from 90% to 10% along this gradient. These findings indicate that nodosity of cyprideid species as well as statistical analysis of ostracode assemblages can be used to interpret paleosalinities. Currently, the trace element concentrations (Mg, Mn, Sr, and Fe) of individual shells of the cyprideid species are being analyzed to evaluate the relationship between salinity and these concentrations.

X-ray diffraction analysis of bulk calcite mud displays an increase in Mg concentration from 2 to 7 mol% MgCO₃ bayward that may be related to the increase in miliolid content of the sediment. Populations of foraminifers are dominated by one miliolid (*Criboelphidium*) near shore, and increase in miliolid species richness off shore.