

ACID DEPOSITION EFFECTS ON ARCHEOLOGICAL MONUMENTS IN MEXICO**H. Bravo**, R. Sosa, R. Soto, P. Sanchez, A. Alarcon, J. Ruiz, J. Kahl*National University of Mexico, Mexico City, Mexico*

Effects of acid deposition on monuments by natural weathering or by man made pollutants are well known. Recently, interest in materials damage has included the effects of acid precipitation, in addition to the effects of gaseous and particulate air pollution. Tajin and Maya archeological zones, in Veracruz, Tabasco, Campeche, Quintana Roo and Yucatan, Mexico, has a great cultural and historical value for mankind. However, there is a great concern on the potential effect of acidic deposition on these monuments because their building material is mainly calcium carbonate. It is known, also, these monuments are surrounded by atmospheric pollution sources (power electric plants, refineries, off and on shore oil exploitation, etc.). To know better the effects on the monuments, besides the pollution sources, it is fundamental to investigate the pathways of polluted air parcels follow after these pollutants are emitted by the sources. To know the frequency and characteristics of the acid wet deposition on these areas, two monitoring rain collectors were installed and operated during different years (Tulum, Quintana Roo: 1994-1995 and Tajin, Veracruz: 2002-2004). Once the characteristics of the deposition were determined, an experimental accelerated deterioration chamber was used to quantify the potential effects of acidic precipitation on Tulum and Tajin. Slabs of limestones were exposed to synthetic acid rain, prepared in the laboratory, according to the chemical composition of natural rain from those sites. Climate condition of these sites were set up to match those found in the field. Superficial recession was also determined on both sites.