



## Methods of Reconciling Geographic Boundaries in Integrated Research

**Mr. Kytt MacManus**

*Columbia University Center for International Earth Science Information Network (CIESIN), United States*

Keywords: Low Elevation Coastal Zones, Coastline, Sea Level Rise, Boundary Adjustment

Data integration using population grids often involves complicated cases of boundary mismatches that must be reconciled. The low elevation coastal zone (LECZ) project provides country level estimates of urban, rural, and total population and land area in low elevation coastal zones. The estimates are derived from the Global Rural-Urban Mapping Project version 1 (GRUMP v1) population grids for the years 1990 and 2000, population estimates for 2010, and a Digital Elevation Model (DEM) produced from the Shuttle Radar Topographic Mission (SRTM). The estimates are based on 3 arc-second (~90m) population, urban-rural designation, and elevation grids. In order to produce accurate coastal estimates, the geographic boundaries of GRUMP v1 were adjusted to conform to the 3 second SRTM data. This presentation will describe an automated procedure for boundary adjustment, and report on the number of urban and rural inhabitants at varying low lying coastal elevations. In addition, other integrated research projects facing similar issues and obstacles will be discussed.