Abstract

Since the 19th century, excavations at the Maya site of Tikal have continually provided intriguing archaeological insights into the Maya world. Tikal was one of the most influential powers in the Southern Maya Lowlands, and maintained wide-ranging relationships with neighboring sites throughout the Maya area. These inter-site relationships are described extensively in the epigraphic record of Tikal and its neighbors. As one of the major powers in the Maya region, Tikal was engaged in frequent warfare with rival cities in the Lowlands. The objective of this thesis project was to model probable paths for Tikal's warfare interactions in the region through the use of least cost path analysis. The study generated three separate sets of points, to the Maya sites of Caracol, Calakmul, and Naranjo using the Path Distance tool in ArcGIS. Least cost path analysis expresses the efficiency of each route as a function of time and distance. The study generated these least cost paths through the use of Tobler's Hiking function in order to express how the inhabitants of Tikal would have traveled through the unique terrain of the Maya Lowlands. This thesis also used sensitivity analysis to test the location sensitivity of the modeled paths. These analyses determined that the least cost paths diverge significantly if input data is altered. The least cost path analysis indicated that the modeled routes represented a set of probable paths from Tikal to its neighboring rival sites.