

THINKING
ABOUT
MOVEMENT

The College of Arts and Sciences

10th Annual Colloquium

APRIL 2 & 3, 2014

MORRIS UNIVERSITY CENTER

SOUTHERN ILLINOIS UNIVERSITY
EDWARDSVILLE

COLLEGE OF ARTS & SCIENCES

10:00am-10:30am

Location: Maple/Dogwood

Participant: Aldemaro Romero

Lost in Migration: Lack of Correlation Between Geomagnetic Anomalies and Cetacean Strandings in the Caribbean

5. Whether cetacean strandings can be attributed, at least in part, to coastal geomagnetic anomalies has been a source of controversy for many years. Data has yielded ambiguous results which have been interpreted as the consequences of different geologies of the studied areas. To test this hypothesis we analyzed all available cetacean stranding data for the Caribbean ($n = 286$) (north South American coasts, Atlantic Central American coasts, including the Yucatan Peninsula), and the Antilles. We tested this hypothesis using two approaches: (1) matching locations of strandings events versus the presence or absence of geomagnetic anomalies and (2) matching areas of geomagnetic anomalies versus the occurrence or not of cetacean strandings for those localities. In both cases we look at binomial equality between the data. In neither case we found any correlation between anomalies and stranding events. However, our data had a bias that was not present in previous studies (U.K., U.S.A., and New Zealand). The availability of stranding data is highly dependent from a geographic viewpoint because areas for which comprehensive studies have been carried out (e.g., Puerto Rico, Venezuela) there is an abundance of data while for others (e.g., Cuba) data is almost non-existent, probably because the lack of local research efforts and unavailability of data in general. We suggest that indigenous scientific development is a major factor in these kinds of meta-analyses. We also propose the creation of area-based databases for regions like these so data is easily available and encourages further research.