

Stephen F. Austin State University
SFA ScholarWorks

Faculty Publications

Spatial Science

11-2012

Application of Geospatial Technologies for Understanding and Predicting Vector Populations and Vector-Borne Disease Incidence (Abstract)

J. Degroote
University of Northern Iowa

S. R. Larson
University of Wisconsin - Madison

Yanli Zhang
Arthur Temple College of Forestry and Agriculture, Stephen F. Austin State University, zhangy2@sfasu.edu

Ramanathan Sugumaran
University of Northern Iowa

Follow this and additional works at: <http://scholarworks.sfasu.edu/spatialsci>

[Tell us](#) how this article helped you.

Recommended Citation

Degroote, J.; Larson, S. R.; Zhang, Yanli; and Sugumaran, Ramanathan, "Application of Geospatial Technologies for Understanding and Predicting Vector Populations and Vector-Borne Disease Incidence (Abstract)" (2012). *Faculty Publications*. Paper 27.
<http://scholarworks.sfasu.edu/spatialsci/27>

This Article is brought to you for free and open access by the Spatial Science at SFA ScholarWorks. It has been accepted for inclusion in Faculty Publications by an authorized administrator of SFA ScholarWorks. For more information, please contact cdsscholarworks@sfasu.edu.

Application of Geospatial Technologies for Understanding and Predicting Vector Populations and Vector-Borne Disease Incidence

DeGroot, J. P., Larson, S. R., Zhang, Y. and Sugumaran, R. (2012), Application of geospatial technologies for understanding and predicting vector populations and vector-borne disease incidence. *Geography Compass*, 6: 645–659. doi: 10.1111/gec3.12003

Abstract

Vector-borne diseases inflict a heavy health burden. Numerous vector species have expanded their ranges while some vector-borne diseases have emerged in new geographic areas or reemerged in former endemic areas, potentially due to global climate change. The continued health burden and the expansion in vector and vector-borne disease ranges have led to an increased need for understanding and predicting in space and time the potential abundance and distribution of vectors and the transmission of vector-borne diseases. Advances in computing technologies, increased spatial data availability, and greater understanding of ecological drivers have made it commonplace to attempt to understand and estimate, in time and space, vector populations and vector-borne disease incidence. Although there have been great advances there are still limitations due to complex and varying ecologies and epidemiological contexts of vector-borne diseases as well as data limitations. In this paper, we will provide an overview of and examine advances and limitations in the use of geospatial technologies for understanding and prediction of the drivers of vector populations and vector-borne diseases.