

Cholera Disease Ecology: Remote Sensing, GIS, and the Complex Dynamics of Disease

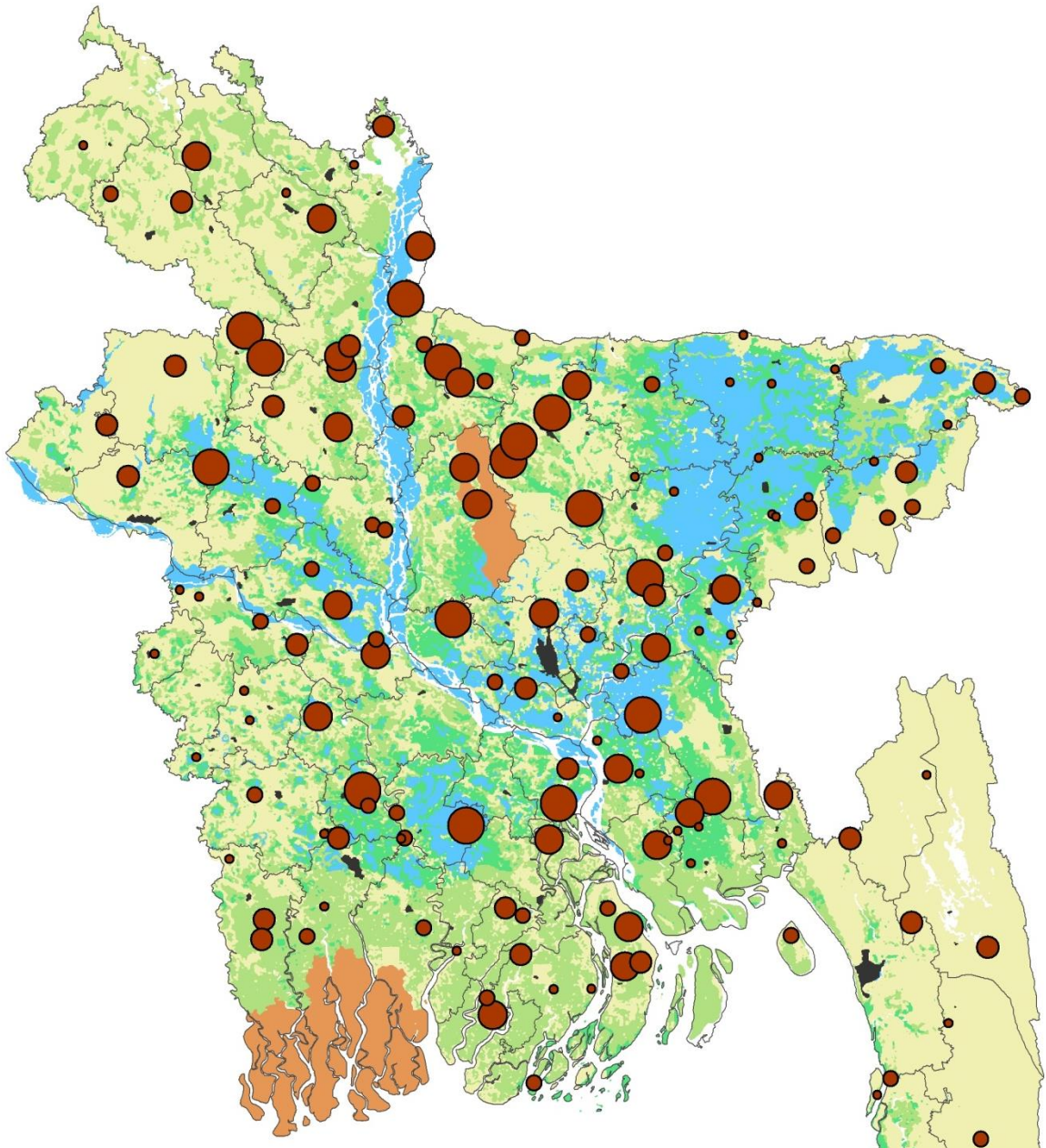
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Diarrheal diseases cause more deaths among children under five than any other disease in Bangladesh. This region also has one of the highest rates of cholera in the world, primarily due to persistent poverty, environmental/seasonal factors and poor sanitation. Assessing risk for diarrheal disease requires knowledge of the complex and dynamic interaction of biological, socio-economic, behavioral, and environmental factors. This seminar examines a series of studies conducted in Bangladesh which utilize both geographic and statistical methods to study the complex dynamics of cholera in the region. Geographic Information Systems is used to integrate data from a wide variety of sources - disease registries, population surveys, flood plain maps and high resolution remotely sensed imagery. Two case studies, carried out at two very different geographic scales, will be used to show how these linked data can be used to statistically model cholera risk. The methods used to measure human-environment interactions explicitly take into account the mode of transmission of cholera and the spatial relationships between humans and their environment. Theoretical and empirical implications of this research for public health, epidemiology, and the field of geography will be discussed.



Diarrhea Prevalence (per 1,000) Land Type (by depth of flooding)

- 1 to 69.9
- 70.0 to 111.9
- 112.0 to 165.9
- 166.0 to 279.9
- 280.0 to 499.0

- Highland
- Medium Highland
- Medium Lowland
- Lowland
- Reserved Forest
- Urban

