

RTMD_x

Risk Terrain Modeling *Diagnostics*

Information behavior model test
environmental incident known resources emerge micro
generators weighted modeling produce influ cre assoc according attractors
RTMD_x vulnerabilities locations incidents - Modeling analysis products cluster
area vulnerability mitigation algorithm anticipate relative
identify factor Terrain RTM crime
empirically application Risk spatial influences
place-based every efforts develop Risk spatial influences
terrain event used prioritization outcome helps appropriate places
strategically increments Model mitigate automates
tactically information communicate place interventions Diagnostics values
aids Model mitigate automates communicate place interventions Diagnostics values
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software articulates selects steps variety
operationalized specific optimally
theoretically-grounded
new Best factors
throughout level diagnosing
entire

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The Risk Terrain Modeling Diagnostics (RTMDx) Utility is a software application for Risk Terrain Modeling (RTM) and for diagnosing spatial crime vulnerabilities. It helps to identify and communicate environmental attractors and generators of crime incidents. Information products can be used to anticipate places that will be most suitable for illegal behavior, identify where new crime incidents will emerge and/or cluster, develop place-based interventions, strategically and tactically allocate resources, and prioritize efforts to mitigate crime risks.

The screenshot shows the RTMDx Risk Terrain Modeling Diagnostics Utility (1.0.4960.21581) window. The interface includes the Rutgers Center on Public Security logo and navigation tabs for Inputs, Log, and About. The main configuration area contains several input fields and buttons:

- Study Area Boundary (shapefile): [Text Field] [Browse]
- Study Area Name: [Text Field]
- Cell Size: [Text Field]
- Block Length: [Spin Box: 500] Raster Cell Size: [Spin Box: 250] Units: [Radio: ft] [Radio: m] [Checked: Locked] Model Type: [Dropdown: Aggravating]
- Outcome Event Data: [Text Field] [Browse]
- Name: [Text Field] X Column: [Dropdown] Y Column: [Dropdown]
- Output: [Text Field]
- Model Name: [Text Field]
- Destination: [Text Field] [Browse]

Below these fields is a Risk Factors section with buttons for Add..., Edit..., and Remove. A table is present with the following headers:

Name	File	Operationalization	Spatial Influence	Analysis Increments

At the bottom of the window are buttons for Run! and Reset Inputs, and a Status field.

RTMDx automates most steps of risk terrain modeling. The algorithm empirically tests a variety of spatial influences and analysis increments for every risk factor input to identify the most empirically- and theoretically-grounded spatial associations with known crime incident locations. Then, it selects only the most appropriate risk factors (with their spatial influences optimally operationalized) to produce a "Best" Risk Terrain Model.

The final model articulates the vulnerability for crime with relative risk values at every place throughout the study area. The environmental factors that create specific vulnerabilities at places are listed and weighted according to their relative spatial influence on the outcome event. This aids in the prioritization of risk mitigation efforts.