



West Ward Agg. Assault

Produced by: unk

Dated: 10/30/2019

Notes

Risk Terrain Modeling (RTM) identifies how certain qualities of geographic space interact and overlap to influence behaviors and outcomes pertaining to your study topic: Agg Assault. This diagnosis of spatial vulnerabilities throughout the study area is used for forecasting, resource deployments, risk mitigation, problem solving, and other highly actionable decision-making efforts

RTM Results MAPS:

Risk terrain maps show vulnerable places within the study area. These are places where the spatial influence of risk factors in the risk terrain model (see "RTM Results TABLE") exist with varying levels of intensity. Highly vulnerable places are more likely to experience future events pertaining to your study topic than elsewhere. Consider allocating resources accordingly.

A Relative Risk Score (RRS) was assigned to each place in your study area, ranging from 1 for the lowest risk to 89.009 for the highest risk place. These scores allow for easy comparison among places in the risk terrain map. For instance, a place with an RRS of 10 has an expected rate of events pertaining to your study topic that is 10 times higher than a place with a score of 1.

Analysis units of forecast = 400 ft places

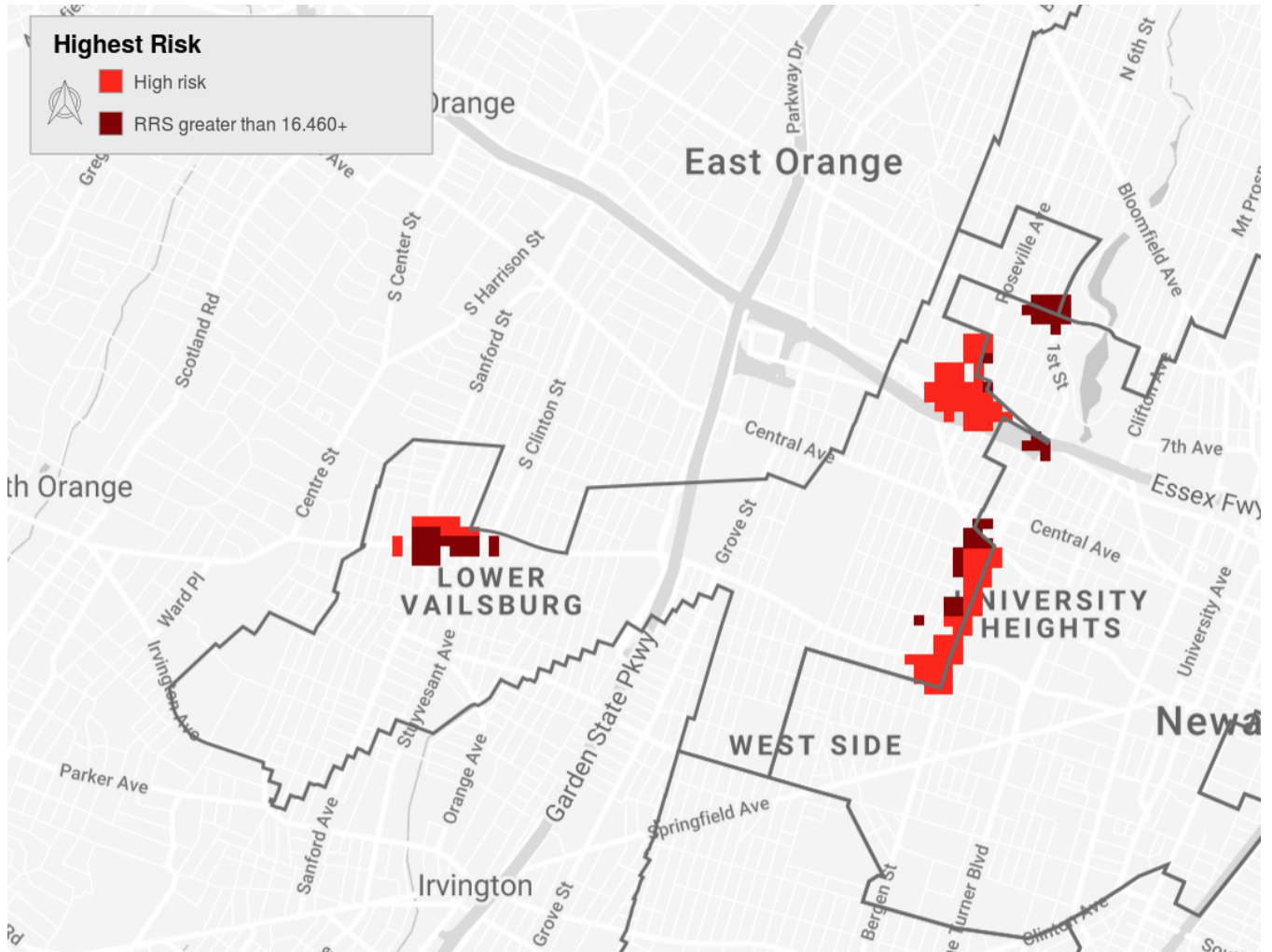
Total number of places: 2130

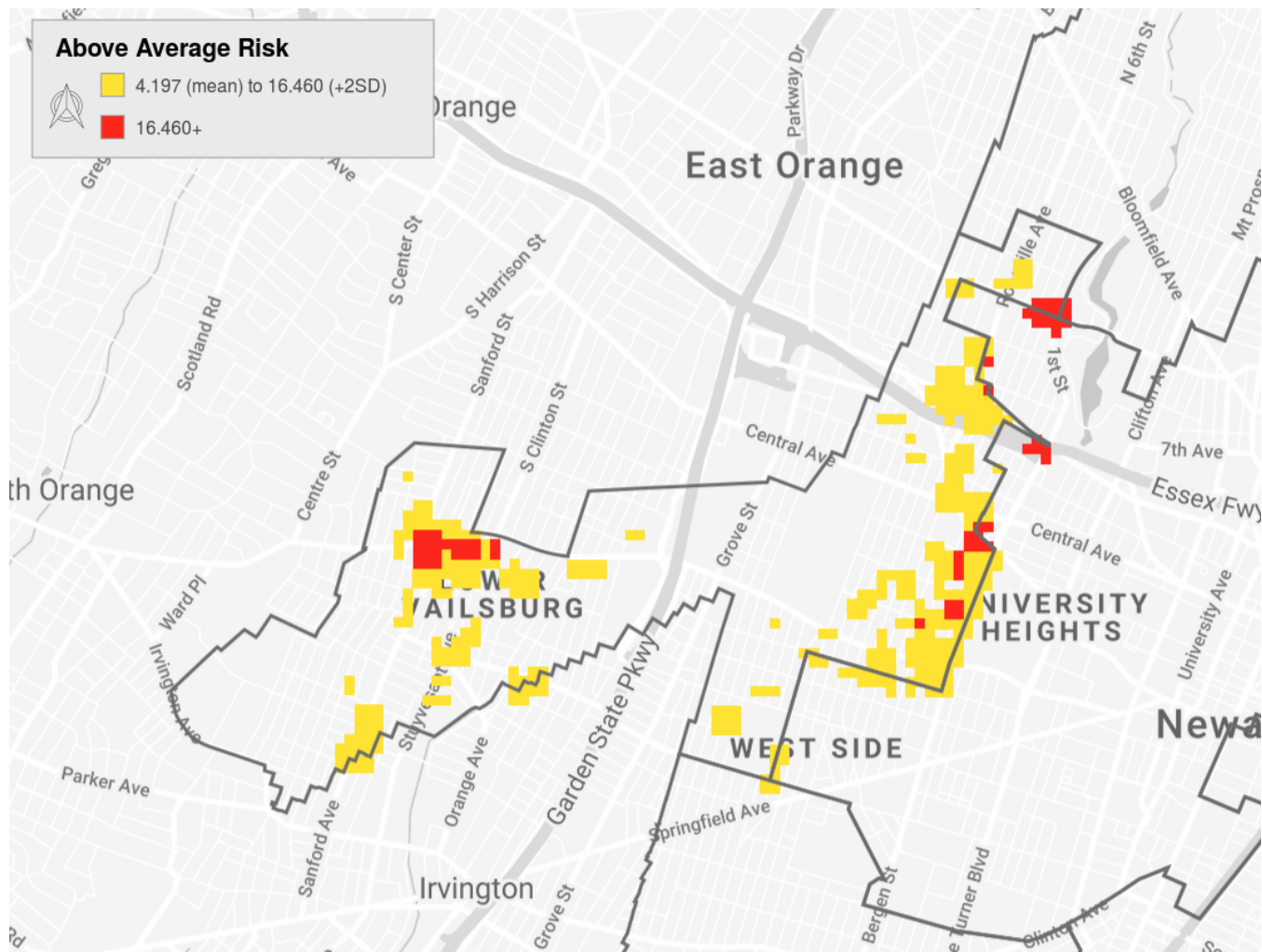
RRS Statistics:

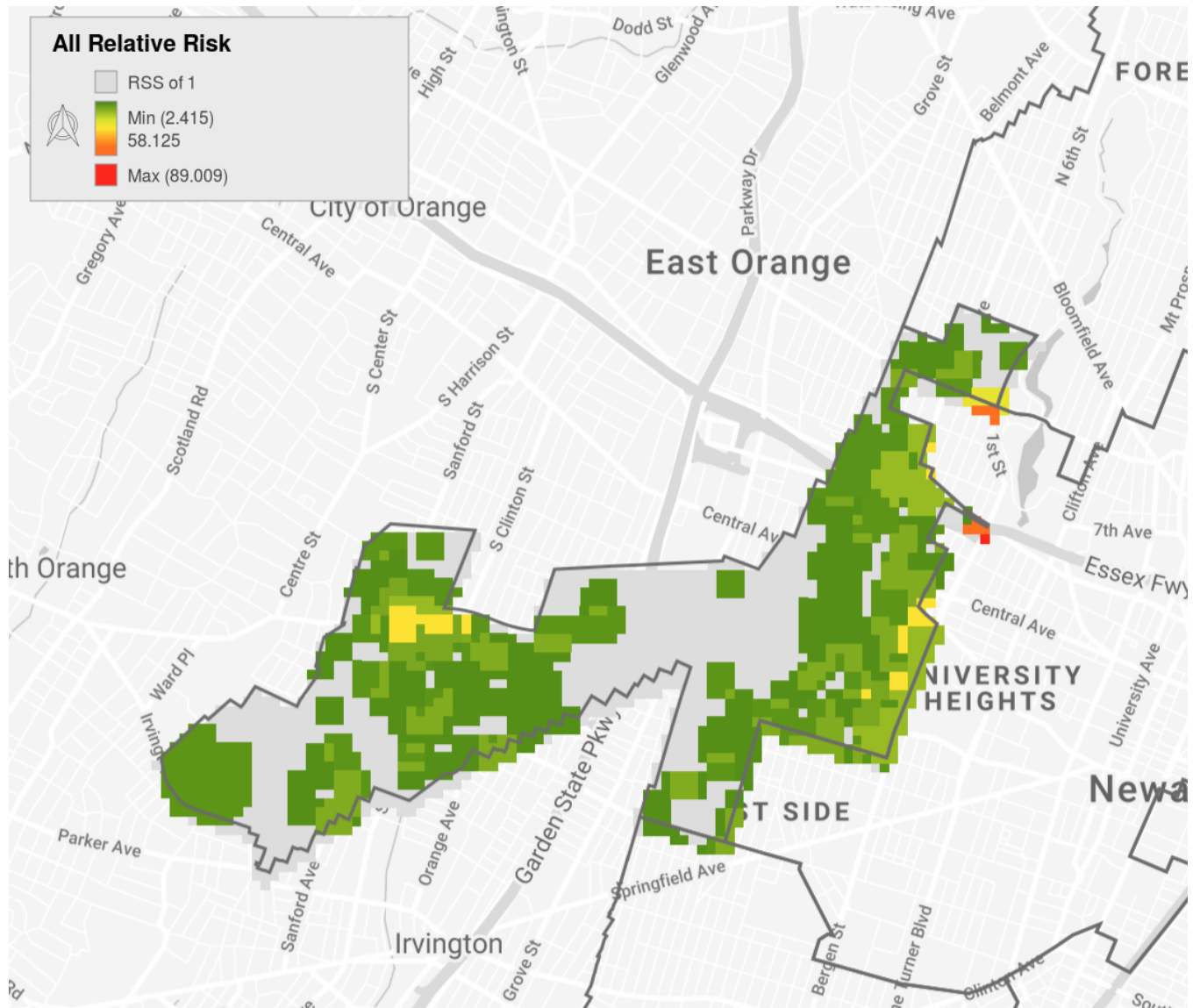
Range = 1 to 89.009

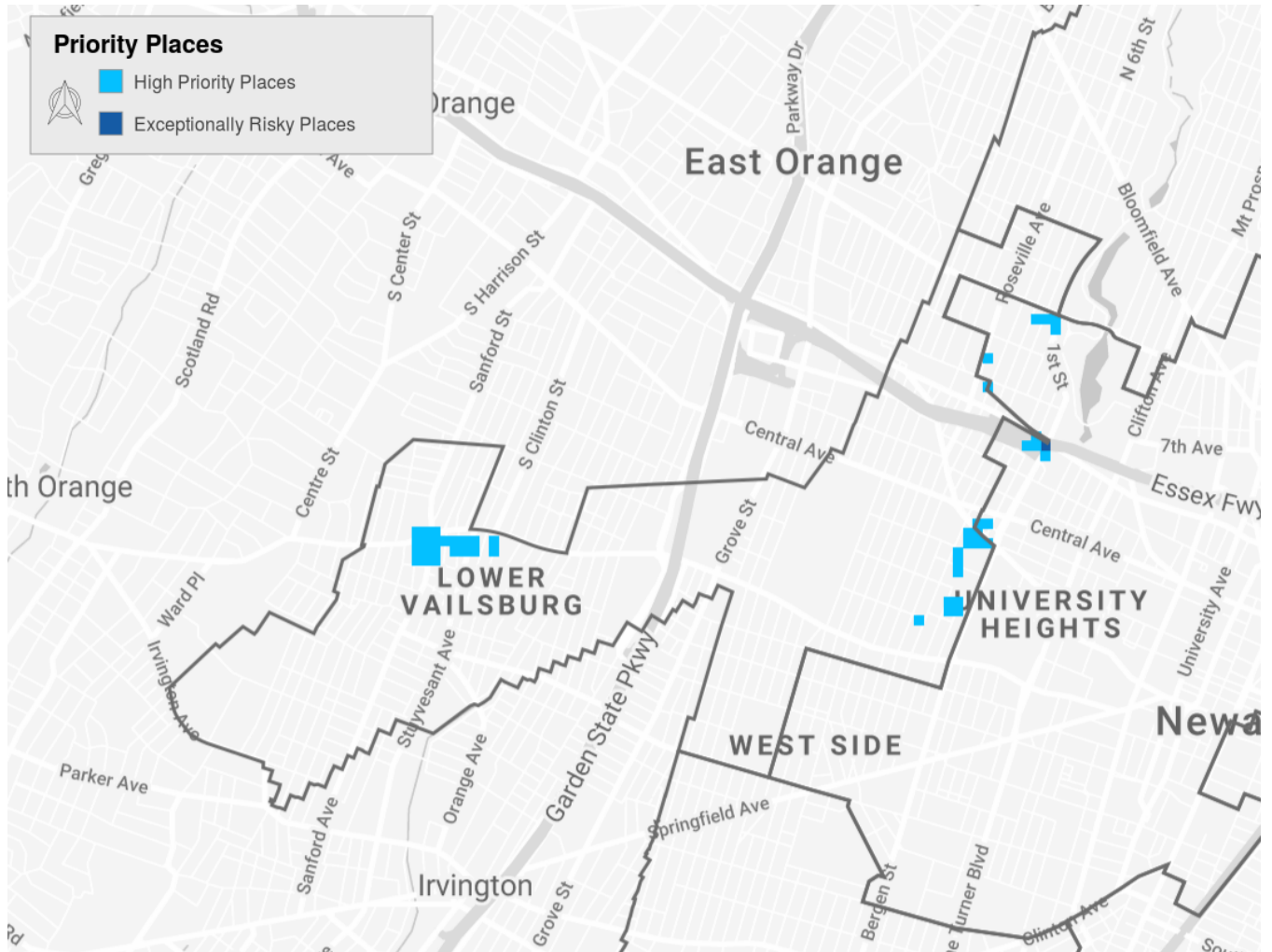
Mean = 4.197; Standard Deviation = 6.131

Number of Places greater than 2 Standard Deviations from the Mean: 57 (2.68% of the study area)











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RTM Results TABLE:

Understand risk factors in the risk terrain model according to the operationalization, spatial influence, and relative risk value (RRV). Interpret RRVs as risk factor weights; places affected by a risk factor with a RRV of 6 are twice as risky compared to places affected by risk factor with a RRV of 3. Develop risk narratives for the study topic based on the RTM Results Table. You may choose to prioritize the risk factors for mitigation based on the RRVs and/or your risk narratives.

Risk Factor	Operationalization	Spatial Influence	RRV
RF - Train_Stations.shp	Proximity	800	24.066
RF - LG_Parking_Lot.shp	Proximity	400	3.699
RF - Clinics.shp	Density	1200	3.267
Abandoned_Buildings2019 - Abandoned_Buildings2019.shp	Proximity	400	2.415



APPENDIX to
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Summary of Analysis Parameters:

Boundary File: BM - Newark_Wards.shp

Study Area Name: South Ward

Topic Issue Data File: Crime_Thru_6_30_M-F - Crime_Thru_6_30_M-F.shp

Topic Issue Name: Agg Assault

Model Type: Aggravating

Standard Value: 400 ft

Place Size: 200 ft

Filters:

Study Area Filtered to Subarea Polygon ("WARD_NAME"): WEST

By Time of Day ("STARTTIME"): 7:00 AM - 5:00 PM

By Value ("INC_TYPE_P"): Agg Assault

All Risk Factors Tested:

Risk Factor	Operationalization	SVM	Increments
Newark_CoffeeShops	Proximity or Density	3	Whole
Newark_Clubs	Proximity or Density	3	Whole
Newark_Laundromats	Proximity or Density	3	Whole
RF - ATMs.shp	Proximity or Density	3	Whole
RF - AtRisk_Housing.shp	Proximity or Density	3	Whole
RF - Banks.shp	Proximity or Density	3	Whole
RF - Bars.shp	Proximity or Density	3	Whole

Risk Factor	Operationalization	SVM	Increments
RF - CheckCashingSvcs.shp	Proximity or Density	3	Whole
RF - Clinics.shp	Proximity or Density	3	Whole
RF - ConvenienceStores.shp	Proximity or Density	3	Whole
RF - GasStations.shp	Proximity or Density	3	Whole
RF - GroceryStores.shp	Proximity or Density	3	Whole
RF - Hospitals.shp	Proximity or Density	3	Whole
RF - Jewelry_Store.shp	Proximity or Density	3	Whole
RF - LG_School.shp	Proximity or Density	3	Whole
RF - LG_Parking_Lot.shp	Proximity or Density	3	Whole
RF - Liquor_Store.shp	Proximity or Density	3	Whole
RF - Parks.shp	Proximity or Density	3	Whole
RF - Pawn_Shops.shp	Proximity or Density	3	Whole
RF - Pharmacies.shp	Proximity or Density	3	Whole
RF - Restaurant_w_Liquor.shp	Proximity or Density	3	Whole
RF - Restaurants.shp	Proximity or Density	3	Whole
RF - Scrap_Metal.shp	Proximity or Density	3	Whole
RF - Train_Stations.shp	Proximity or Density	3	Whole
Vacant_Lots - Vacant_Lots.shp	Proximity or Density	3	Whole
RF - Parks Updated	Proximity or Density	3	Whole
Abandoned_Buildings2019 - Abandoned_Buildings2019.shp	Proximity or Density	3	Whole



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Analysis ran on July 30th 2019 at 4:13 pm

Analysis Duration: 1 min 7 sec

GIS Duration: 0 min 4 sec

Image Duration: 0 min 15 sec

Total Duration: 1 min 26 sec

R Script Results:

Family: c("P0", "Poisson")

```
Call: gamlss(formula = crime_count ~ r16p02_RF_.LG_Parking_Lot.shp_proximity_400 +  
      r26p03_RF_.Train_Stations.shp_proximity_800 + r10d01_RF_.Clinics.shp_density_1200 +  
      r01p02_Abandoned_Buildings2019_.Abandoned_Buildings2019.shp_proximity_400,  
      sigma.formula = ~1, family = P0, data = raster.data, method = mixed(3, 10))
```

Fitting method: mixed(3, 10)

Mu link function: log

Mu Coefficients:

	Estimate	Std. Error
(Intercept)	-5.2916	0.3436
r16p02_RF_.LG_Parking_Lot.shp_proximity_400	1.3080	0.3321
r26p03_RF_.Train_Stations.shp_proximity_800	3.1808	0.5615
r10d01_RF_.Clinics.shp_density_1200	1.1838	0.3325
r01p02_Abandoned_Buildings2019_.Abandoned_Buildings2019.shp_proximity_400	0.8818	0.3044

	t value	Pr(> t)
(Intercept)	-15.402	7.937e-51
r16p02_RF_.LG_Parking_Lot.shp_proximity_400	3.938	8.477e-05
r26p03_RF_.Train_Stations.shp_proximity_800	5.665	1.668e-08
r10d01_RF_.Clinics.shp_density_1200	3.560	3.786e-04
r01p02_Abandoned_Buildings2019_.Abandoned_Buildings2019.shp_proximity_400	2.897	3.808e-03

No. of observations in the fit: 2130

Degrees of Freedom for the fit: 5

Residual Deg. of Freedom: 2125
at cycle: 1

Global Deviance: 391.1564

AIC: 401.1564

SBC: 429.4758