Small Number of Blocks Account for Lots of Crime

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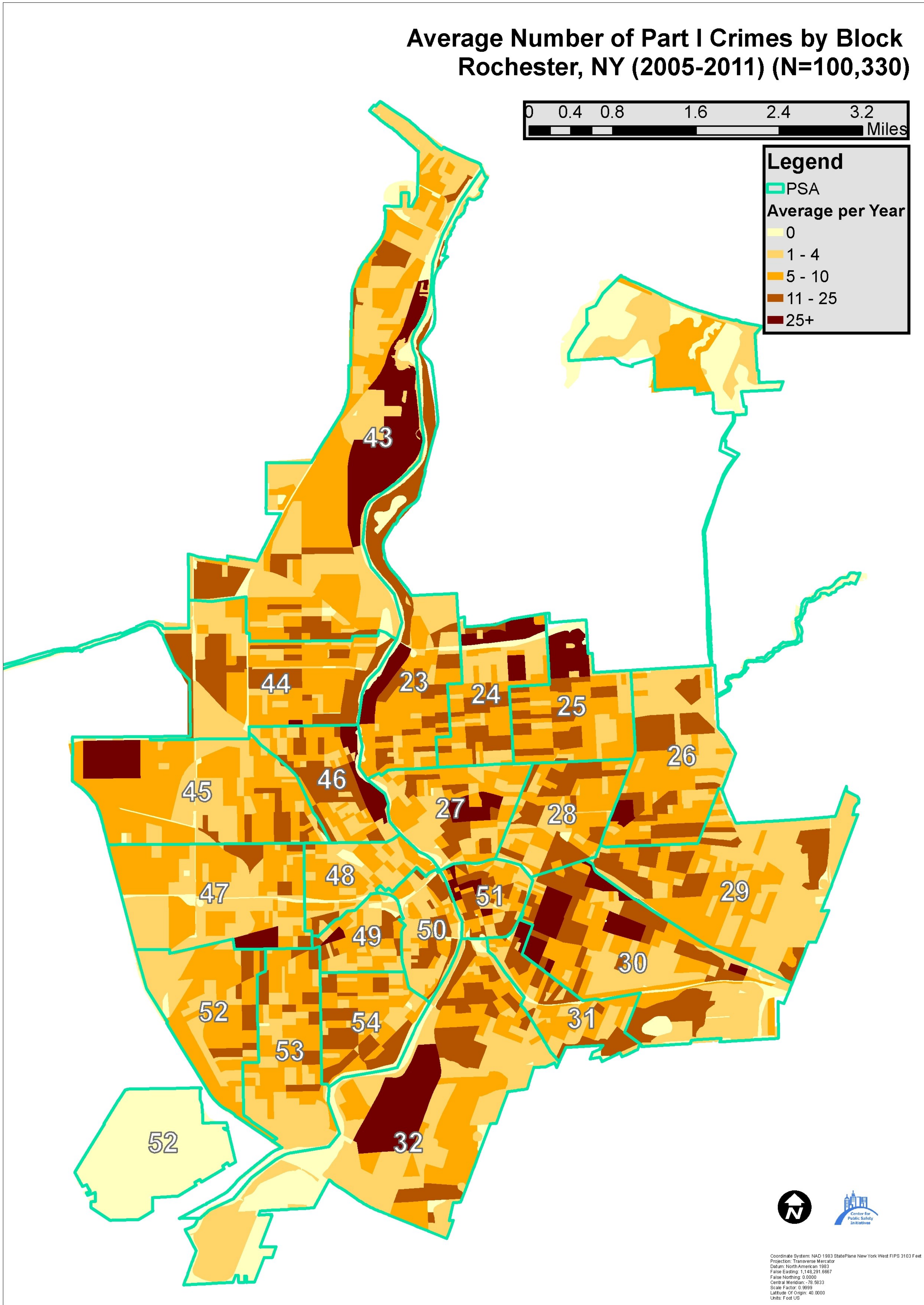
**Average Number of Part I Crimes by Block
Rochester, NY (2005-2011) (N=100,330)**

Legend
PSA
Average per Year
0
1 - 4
5 - 10
11 - 25
25+

Figure 1. Average Crime by Block, City of Rochester, 2005-2011

This study was based off a similar study done by the District of Columbia Crime Policy Institute (DCPI). The DCPI study found that most crime is concentrated in a small number of census blocks in the district—more than 25 percent of the crimes in any year occurred in 5 percent of the blocks.

We followed their methodology to evaluate if a similar scenario existed in the case of the City of Rochester. The crime data covered all reported Part I crimes to the Rochester Police Department over the time period of 7 years (2005 to 2011). A total of a little over 100,000 index crimes were reported during this period with an average of about 14,300 crimes per year. The list of Part I crimes included Murder, Sexual Assault, Aggravated Assault, Robbery, Burglary, Larceny, Motor Vehicle Theft and Arson.

In Figure 1, the map on the left shows the geographical pattern of the average number of index crimes for the City of Rochester. Overlaid on top of the chloropeth map is the grid of the different police service areas in the city along with their code numbers. As can be seen from the map, high crime blocks (those with an average of 25+ crimes per year) occur mostly in the east and the north part of the city. PSA areas 24, 27, 46 and 32 suffer from the highest average number of crime occurrences.

We categorized the blocks by the average number of reported crimes into 5 classes: No crimes, 1-4 crime per year, 5-10 crimes per year, 10-25 crimes per year , and 25+ crimes per year. Table 1 lists these categories along with parameters such as the proportion of all census blocks of Rochester contained within each of these categories and the proportion of all index crimes contained within each of these categories. This arrangement of data provides an useful insight as to whether the majority of the crime happens in a handful of census blocks, and we find that to be the case for Rochester. For instance, from Table 1 it can be seen that on average, 50 percent of all index crimes is concentrated in less than 15 percent of the census blocks. Thus, the results of this study by the Center for Public Safety Initiatives (CPSI), concur with that of the DCPI study, in that most crime is concentrated in a relatively small number of census blocks.

Table 1. Numbers of Blocks by Crime Count (Avg. per Year) Categories , 2005-2011

	2005	2006	2007	2008	2009	2010	2011
Blocks with No Crime	832	796	834	868	878	847	885
% of All Blocks	27.1	25.9	27.2	28.3	28.6	27.6	28.8
Count of Crime in the Blocks	-	-	-	-	-	-	-
% of Yearly Crime	-	-	-	-	-	-	-
Blocks with 1-4 Crimes	1,002	1,063	1,181	1,174	1,191	1,141	1,206
% of All Blocks	32.6	34.6	38.5	38.2	38.8	37.2	39.3
Count of Crime in the Blocks	2,348	2,489	2,766	2,718	2,686	2,670	2,729
% of Yearly Crime	14.2	15.4	20.3	20.1	20.6	18.8	20.6
Blocks with 5-9 Crimes	728	713	690	666	638	670	622
% of All Blocks	23.7	23.2	22.5	21.7	20.8	21.8	20.3
Count of Crime in the Blocks	4,848	4,751	4,559	4,363	4,190	4,383	4,131
% of Yearly Crime	29.3	29.4	33.4	32.3	32.1	30.9	31.2
Blocks with 10-25 Crimes	449	440	333	323	329	376	327
% of All Blocks	14.6	14.3	10.8	10.5	10.7	12.2	10.7
Count of Crime in the Blocks	6,251	6,238	4,687	4,493	4,410	5,220	4,532
% of Yearly Crime	37.7	38.6	34.4	33.3	33.8	36.8	34.3
Blocks with 25+ Crimes	59	58	32	39	34	36	30
% of All Blocks	1.9	1.9	1.0	1.3	1.1	1.2	1.0
Count of Crime in the Blocks	3,126	2,695	1,628	1,924	1,751	1,908	1,836
% of Yearly Crime	18.9	16.7	11.9	14.3	13.4	13.5	13.9
Total Index Crime	**16,573**	**16,173**	**13,640**	**13,498**	**13,037**	**14,181**	**13,228**

*Total Number of Census Blocks in Rochester = 3,070.

Census Block Categories as Proportion of all Census Blocks in Rochester (2005-11)

Blocks with No Crime
Blocks with 1-4 Crimes
Blocks with 5-9 Crimes
Blocks with 10-25 Crimes
Blocks with 25+ Crimes

Census Block Categories by Contribution to All Index Crimes per Year in Rochester (2005-11)

Blocks with 1-4 Crimes
Blocks with 5-9 Crimes
Blocks with 10-25 Crimes
Blocks with 25+ Crimes

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