

# Spatial Changes of Criminality in Klaipėda 1990-2014: Social and Territorial Approach

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- Geography is important when studying crime because when a crime happens it always has a location, a time and a reason.
- Crime figures are collected from the number of crime incidents reported to the police and from the survey results.
- The systems of recording crimes are not completely reliable.
- When a crime is recorded, it is classified as one of the following: crime against the person (with or without injury), sexual offence, robbery, burglary, offence against vehicles, other theft, fraud and forgery, criminal damage, drug offence, other.

## Spatial Changes of Criminality in Klaipėda 1990-2014: Social and Territorial Approach

- Geography of Crime is a sub-discipline of Human Geography, and focused around the understanding the interplay between crime, space and society through analyses of offences, offenders and the effects of crime.
- Studies of the Geography of Crime have their roots in the mid-nineteenth-century work of European cartographic criminologists who sought to link regional patterns of crime and offender residence to the social and physical environment.
- Mapping crime shows where crimes were committed but that does not tell the full story. It is important to understand how crime affects services in the area and communities.

- The social disorganization thesis advanced by the Chicago School links delinquency residence to the interrelation between economic deprivation, physical deterioration, high population turnover and cultural fragmentation.
- Geography of Crime focused on where crime occurs, involving both the mapping of offences (areal analysis) and to link the distribution of offences to other socio-economic and environmental variables.
- An understanding of spatial patterns of victimization and the fear of crime places researchers in a strong position to contribute the public policy via the development and evaluation of crime prevention and fear-reducing measures.

## The role of “space” in crime

*Two key considerations:*

- Crime has an inherent geographical quality
- Crime is not randomly distributed

*The four dimensions of crime:*

- Legal (a law must be broken)
- Victim (someone or something has to be targeted)
- Offender (someone has to do the crime)
- ***Spatial (it has to happen at a place - somewhere, in space and time)***

*If crimes were random:*

- Equal chance of them happening anywhere at anytime
- But crime is not randomly distributed
- Concentrated into places of activity
- Crime hotspots
- Series follow geographic patterns

- “A progressive blend of practical criminal justice issues with the research field of geographical information systems and science” (Chainey and Ratcliffe, 2005).

- To date research has been limited to exploring the where and when.

- Identifying retrospective concentrations of crime in space and time, and treating space and time discreetly.

***More robust treatment to the current techniques:***

- Kernel density estimation: influence of cell size and bandwidth
- Exploring space and time together
- The *significance* of where and when (spatial significance)

- To understand how unusual the crime pattern is.
- Why (spatial regression) E.g. relationship between why crime happens where it does against other features.
- Not just as a *global* relationship but as a *local* relationship.
- What if (spatial modelling) E.g. if we target an intervention to a particular place what impact may it have, including displacement and diffusion of benefit effects.
- Where and when will it happen again (predictive modelling).
- Forecasting, early warning system, predictive crime mapping.

**Place is important:**

- Plays a key role for helping to understand and tackle crime problems.
- Crime mapping supports many forms of operational, tactical, investigative and strategic policing and crime reduction activity.
- Still only scratching the surface in how we exploit the place dimension of crime
- *“Crime mapping ... has been fundamental in improving police performance in the West Midlands, and in recent months reducing all crime by 20%”*

***Assistant Chief Constable Nick Tofiluk***

*West Midlands Police*



# Mapping crime in Klaipėda

- Dataset of over 125 000 recorded crime cases
- Period: 1990-2014
- Crimes: homicide, robbery, assaults, burglary, theft, shoplifting, narcotics, prostitution, rape and sexual assault, child sexual abuse, public order offences, privately distilled alcohol, extortion, criminal damage.
- Spatial layout of the urban structure: 60 neighborhoods (residential district).
- Mapping method: Kernel method, background quantitative like, dotted like.



## **Change of population and crime records in Klaipėda city**

**In 1990 – 208 000 inhabitants and 2 012 crimes recorded**

**96,7 crimes per 10 000 inhabitants**

|                   |        |                   |        |
|-------------------|--------|-------------------|--------|
| In 1991 – 209 000 | ,2 696 | In 2002 – 190 911 | ,5 800 |
| In 1992 – 208 300 | ,4 248 | In 2003 – 189 526 | ,5 859 |
| In 1993 – 203 300 | ,4 766 | In 2004 – 186 811 | ,6 188 |
| In 1994 – 202 500 | ,4 175 | In 2005 – 183 627 | ,6 096 |
| In 1995 - 202 000 | ,4 537 | In 2006 – 178 300 | ,5 512 |
| In 1996 – 201 577 | ,5 046 | In 2007 – 175 389 | ,5 812 |
| In 1997 – 198 603 | ,5 265 | In 2008 – 172 686 | ,5 453 |
| In 1998 – 196 578 | ,5 692 | In 2009 – 170 699 | ,5 900 |
| In 1999 – 195 698 | ,5 870 | In 2010 – 168 143 | ,5 542 |
| In 2000 – 194 674 | ,5 502 | In 2011 – 162 498 | ,5 492 |
| In 2001 – 193 220 | ,4 643 | In 2012 – 160 142 | ,5 240 |
|                   |        | In 2013 – 158 541 | ,5 648 |

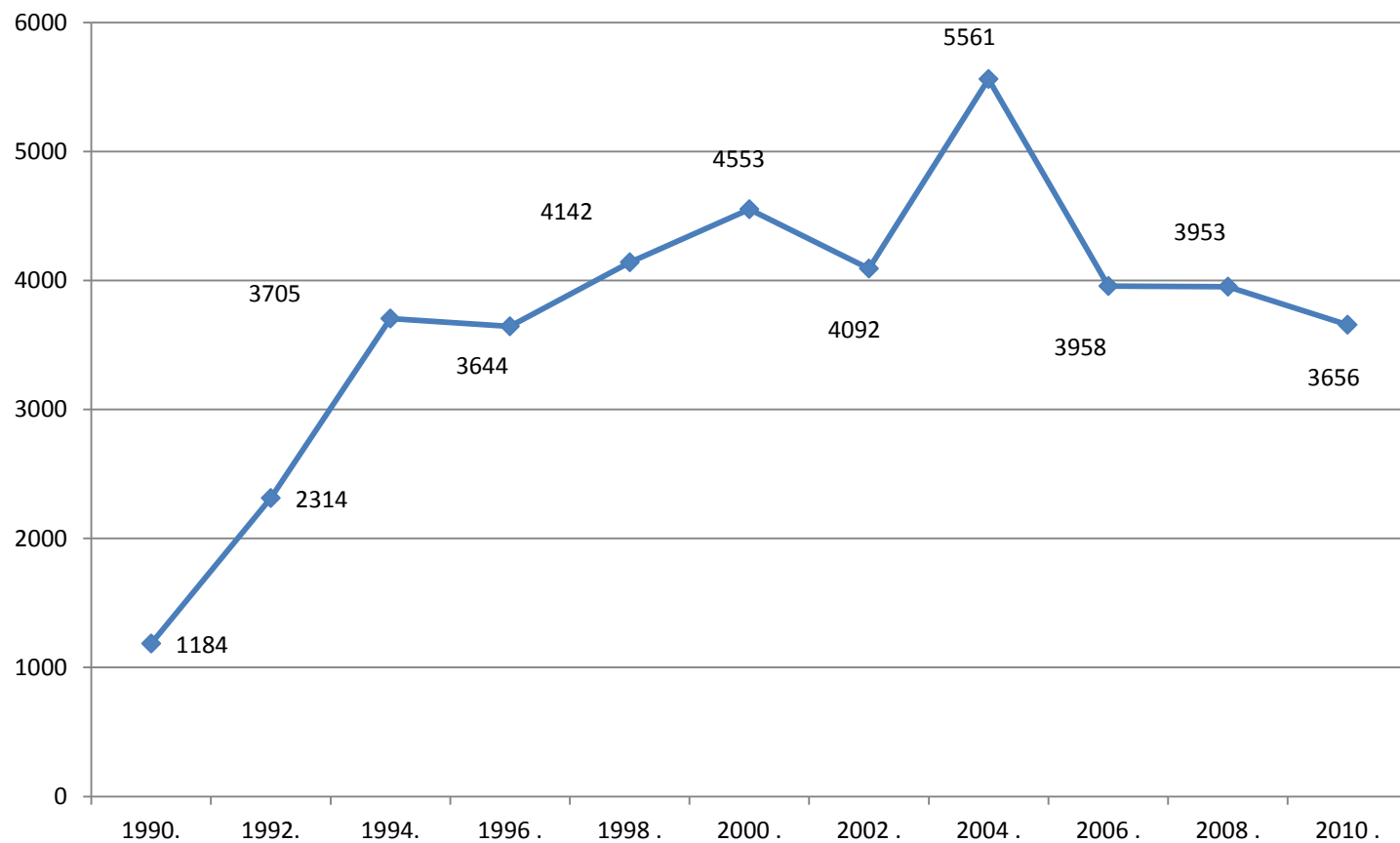
***In 2014 – 157 530 inhabitants and 5 401 crimes recorded***

***356,2 crimes per 10 000 inhabitants***

***Population decrease - 24,26 %***

***Crimes' records increase + 280,7 %***

# Spatial Changes of Criminality in Klaipėda 1990-2014: Social and Territorial Approach

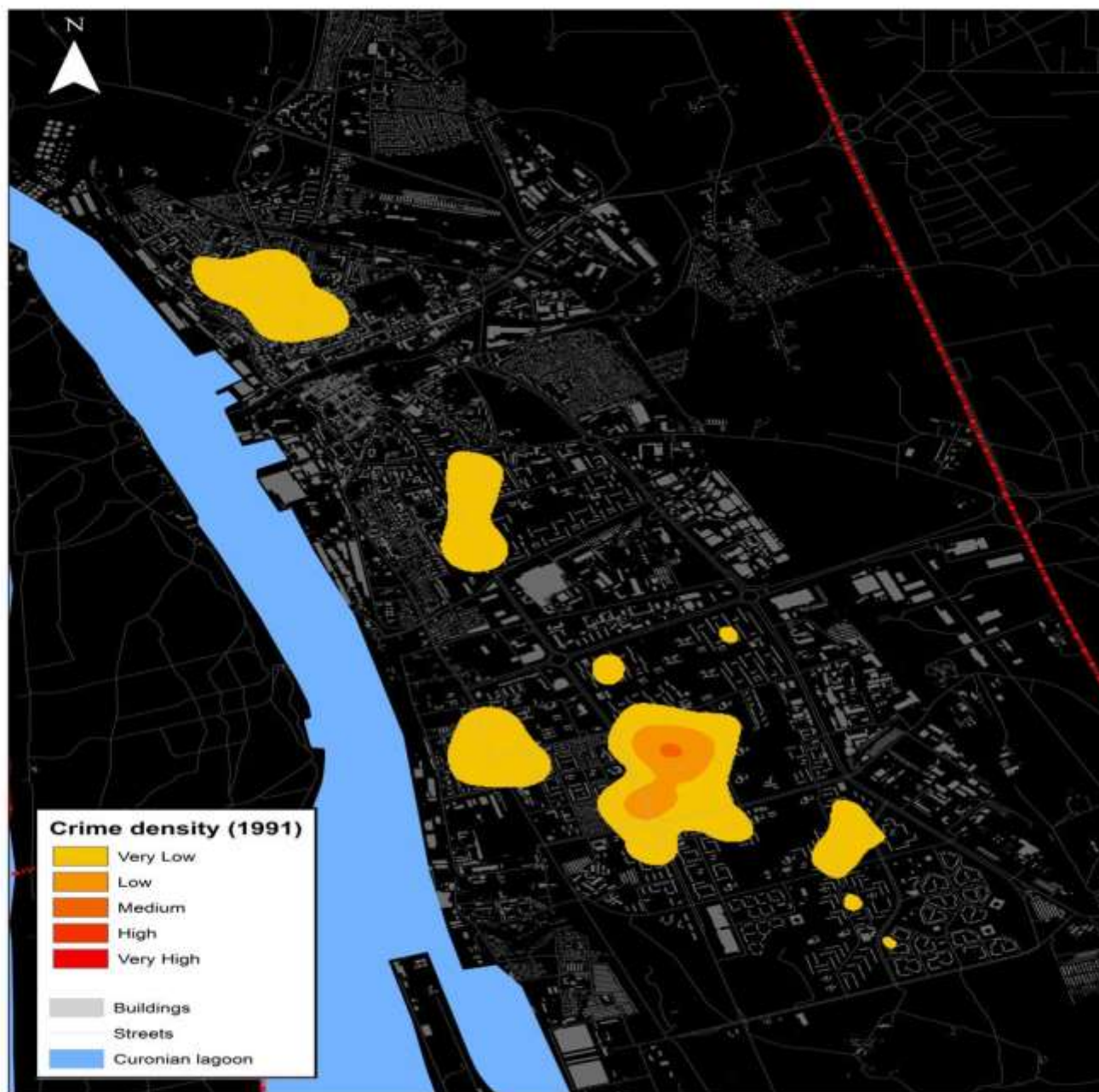


## Methodological issues

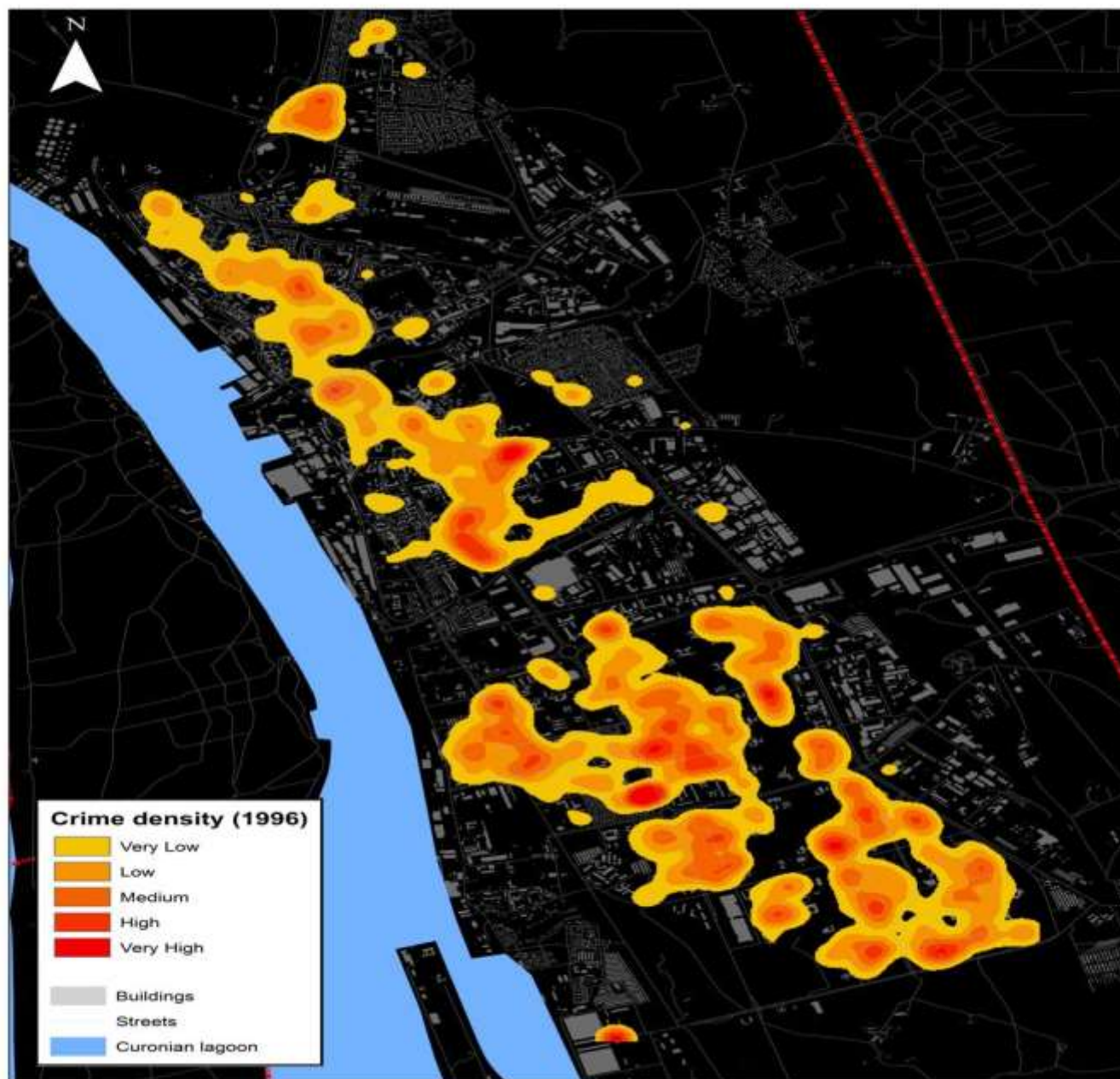
- **Inaccuracy of crime geocoding on micro level**  
*in parks, public spaces, industrial sites, non-residential areas*
- **Categories of crime and spatial references**  
*against property vs. against person*  
*in private place vs. in public space*
- **Changing categories of crime over the time**
- **Social geographic interpretation of crime dynamics**  
*What are the underlying social and environmental risk factors that account for spatial occurrence or spatial coincidence of crime?*  
*What are the main pitfalls leading to incorrect interpretation of crime in the city?*



# Spatial Changes of Criminality in Klaipėda 1990-2014: Social and Territorial Approach

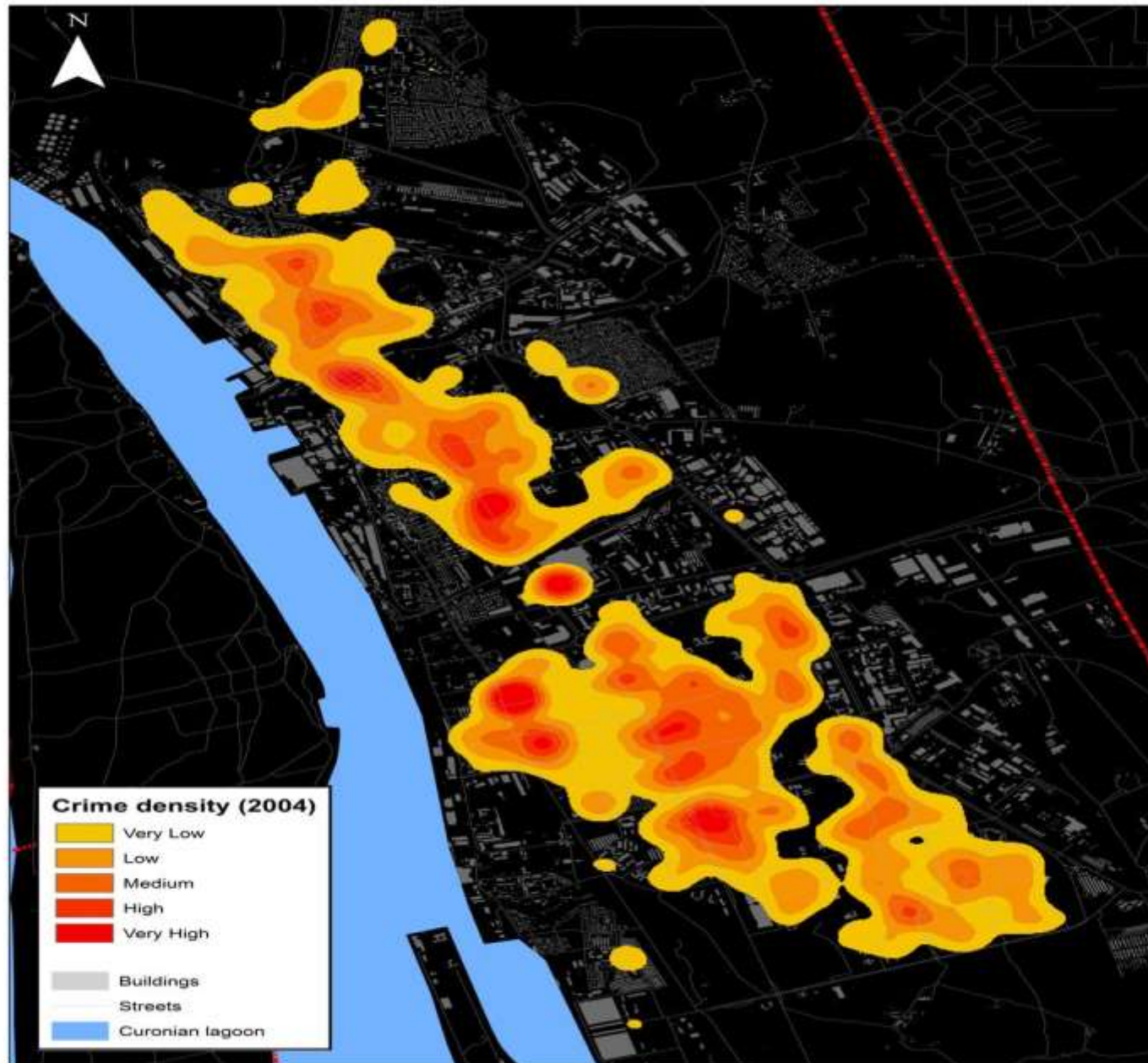


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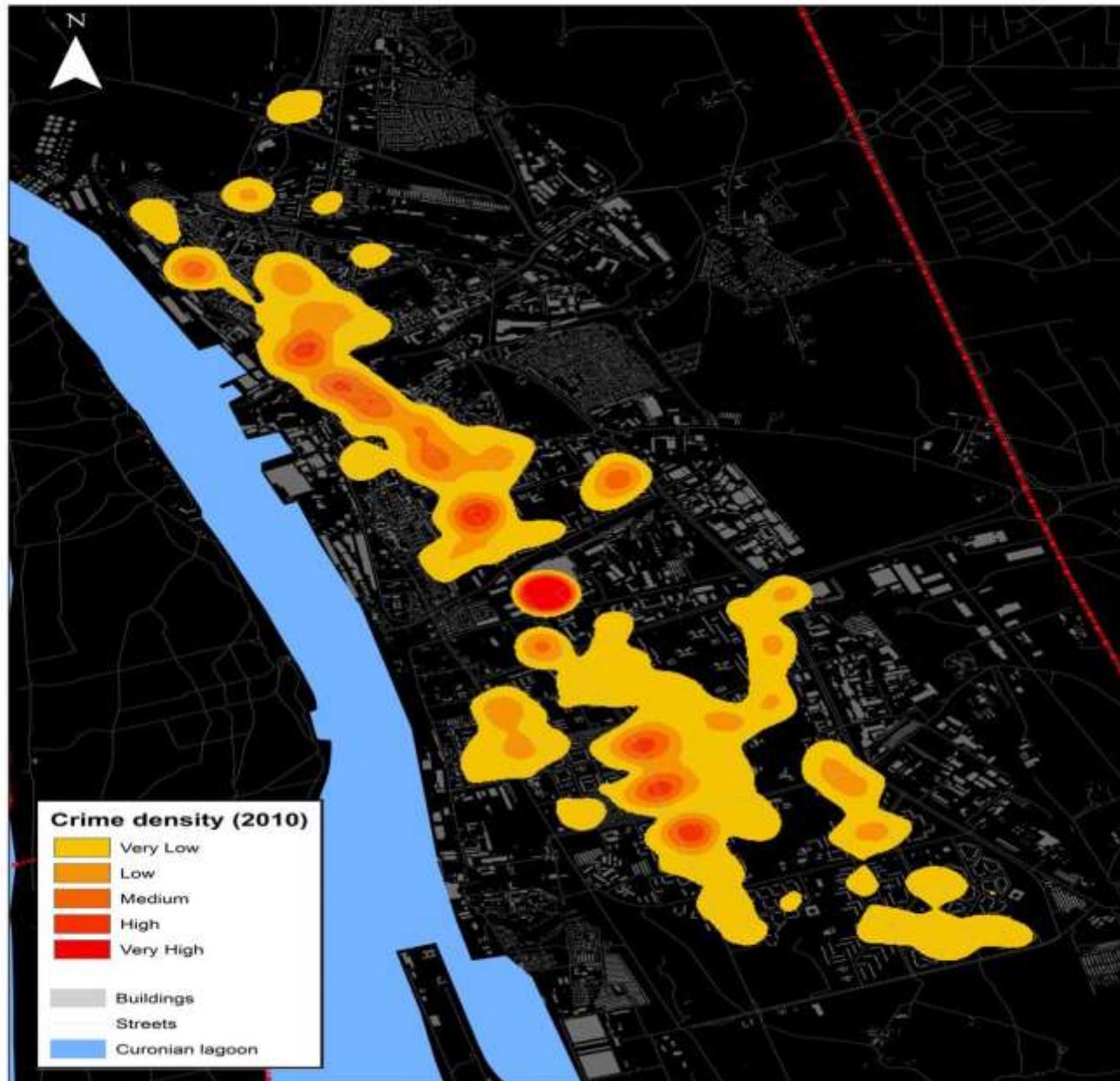




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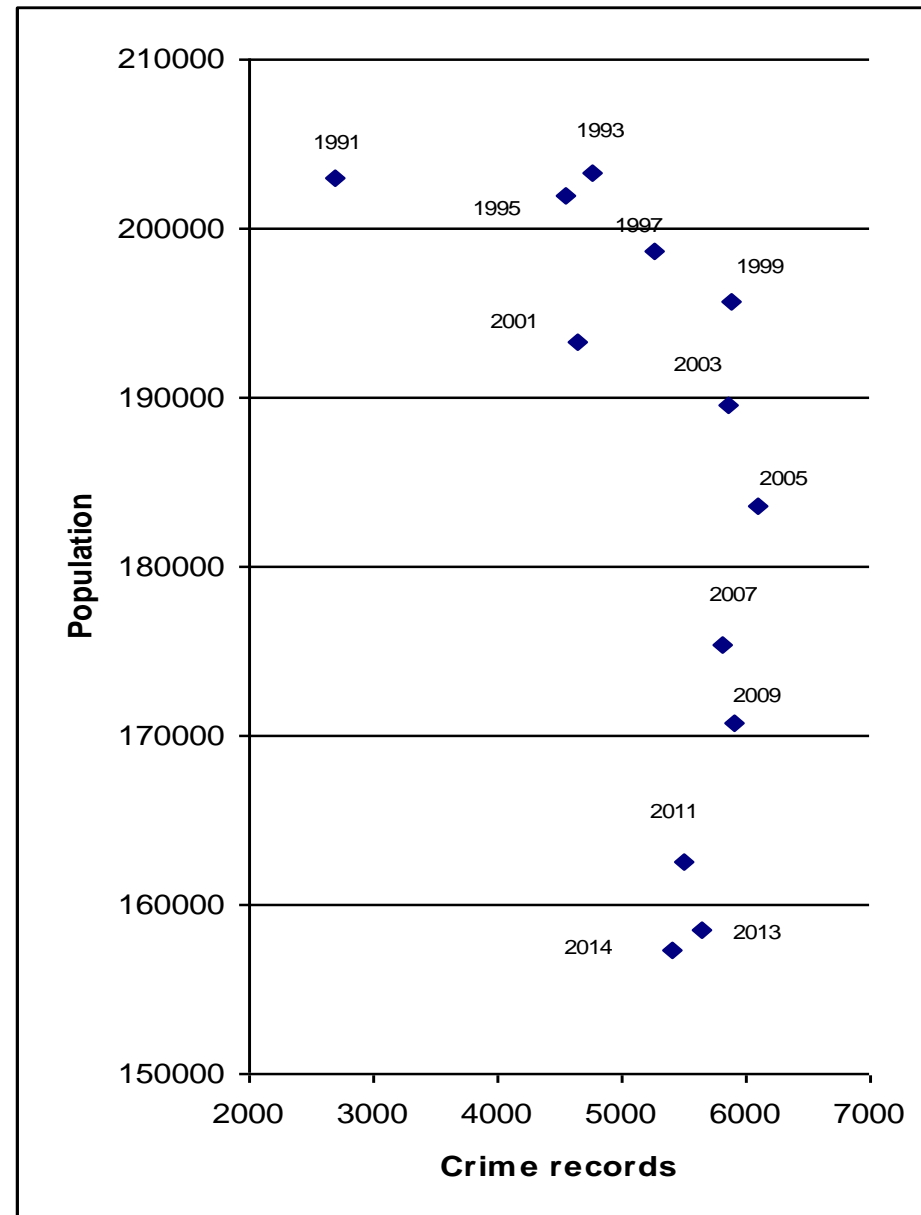


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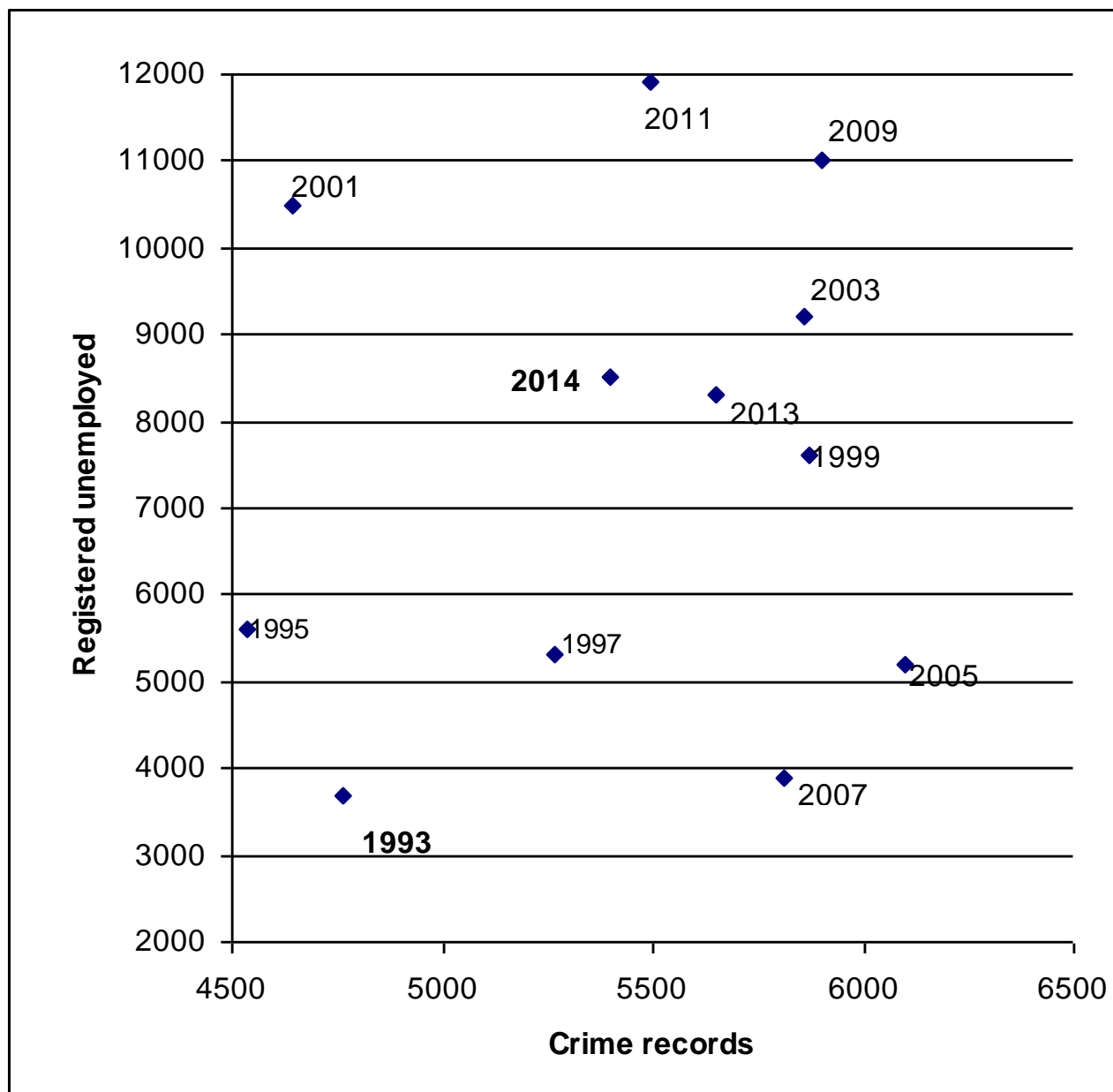




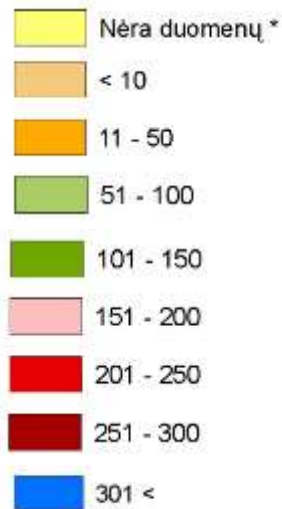
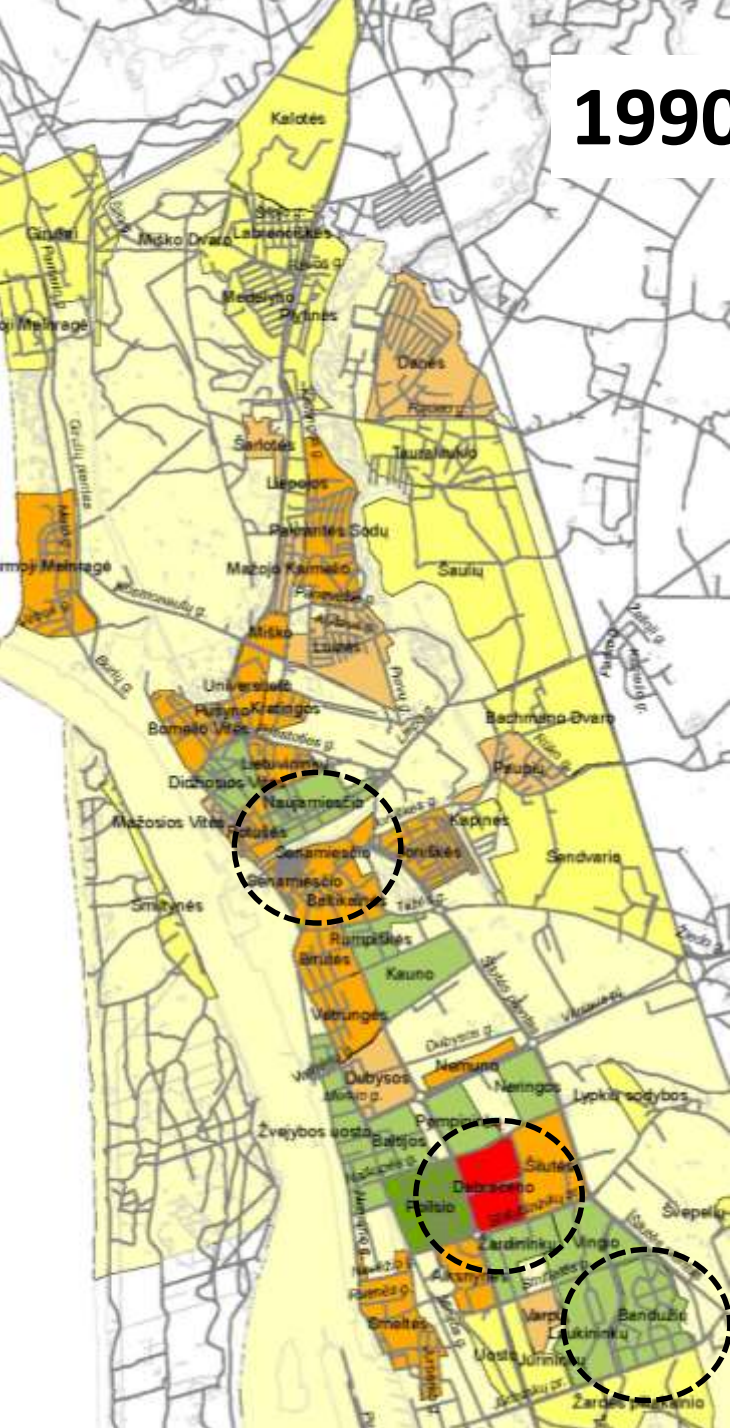
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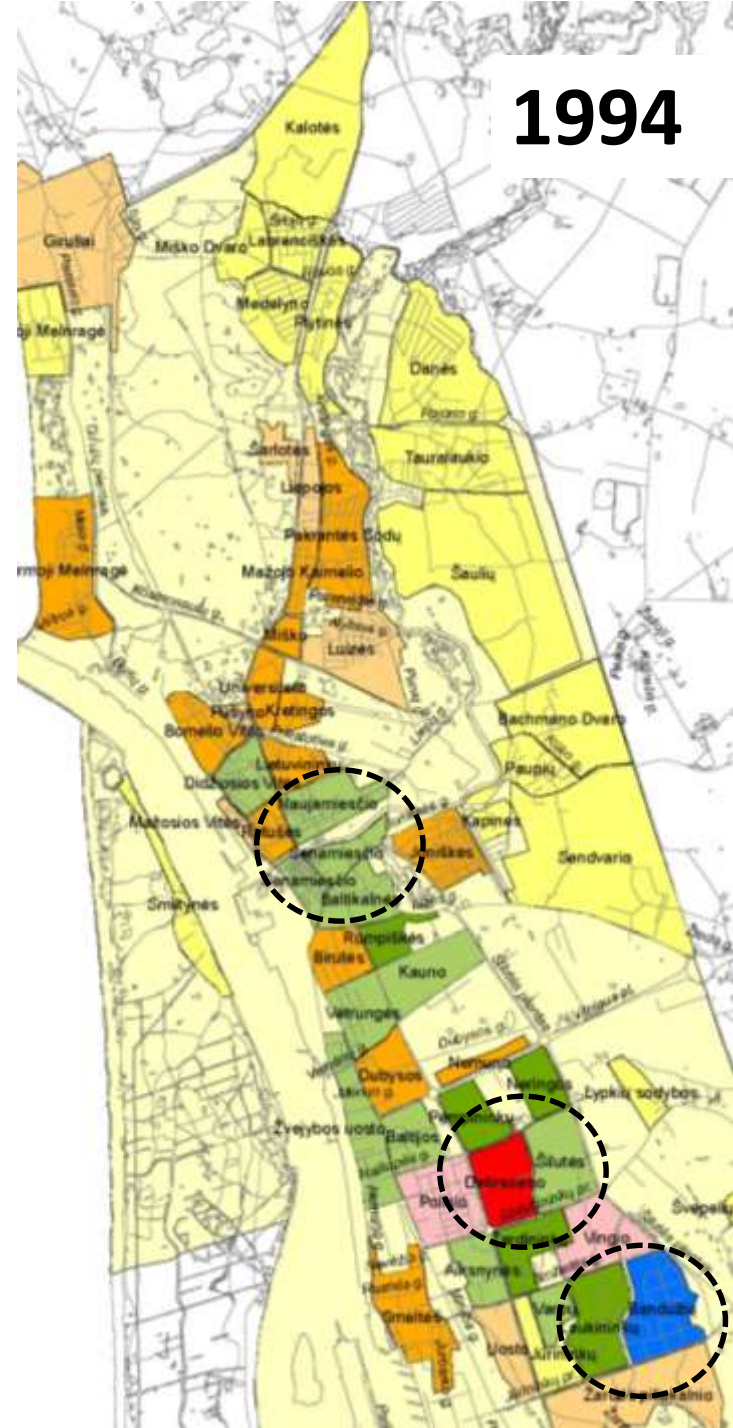
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# 1990

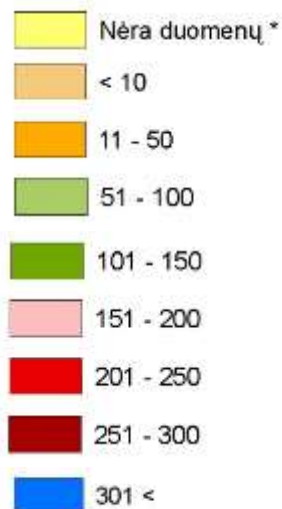
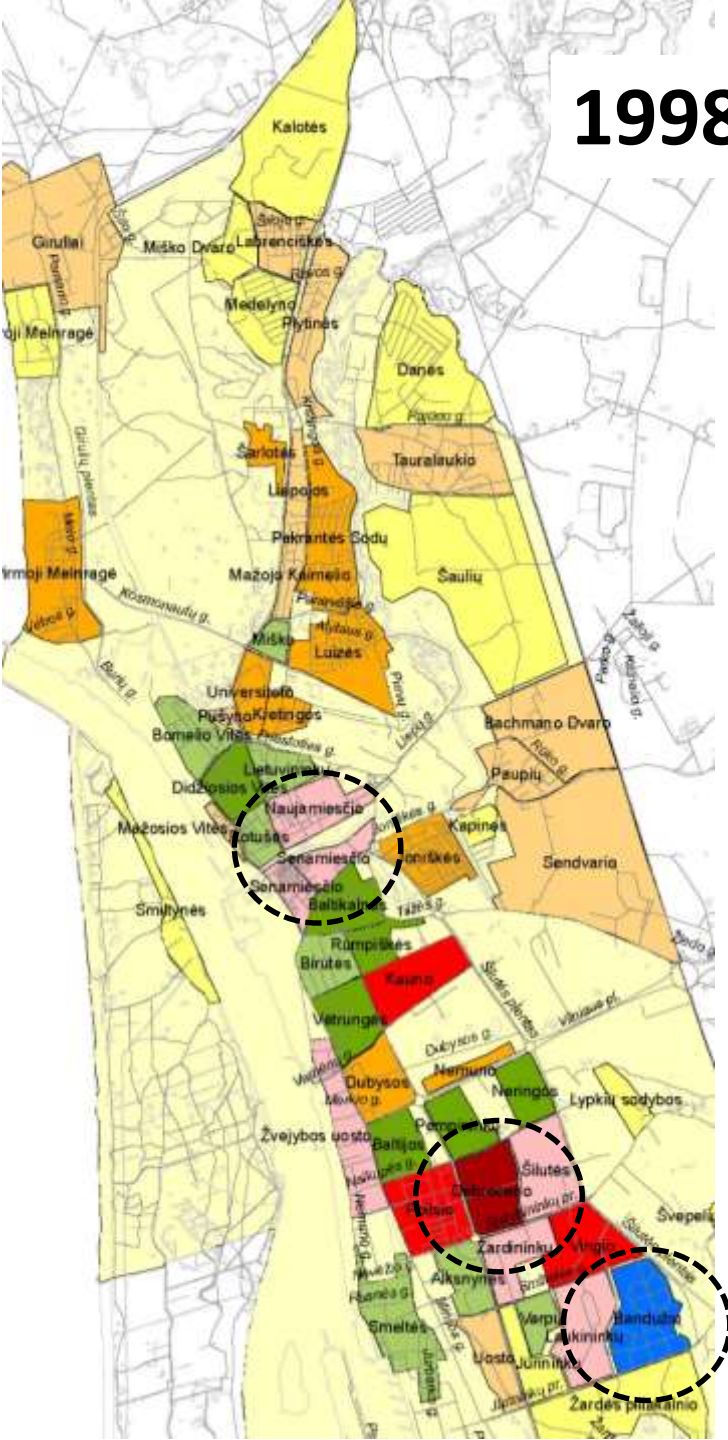


# 1994

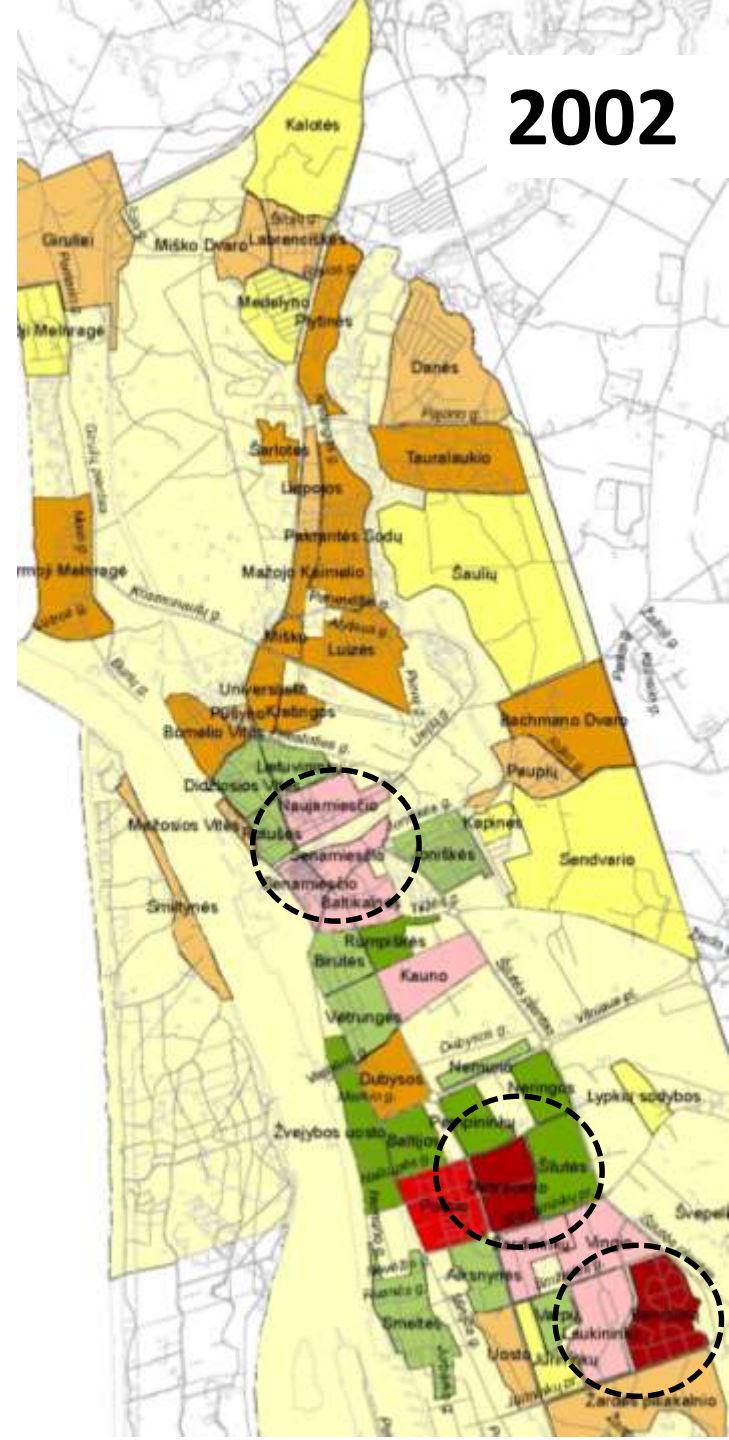




# 1998

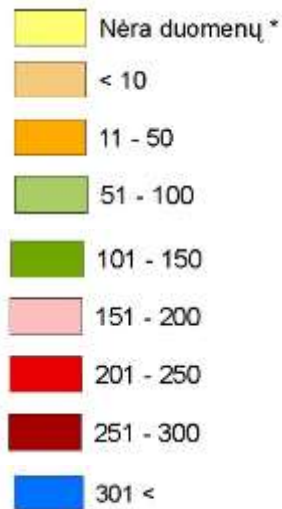


# 2002

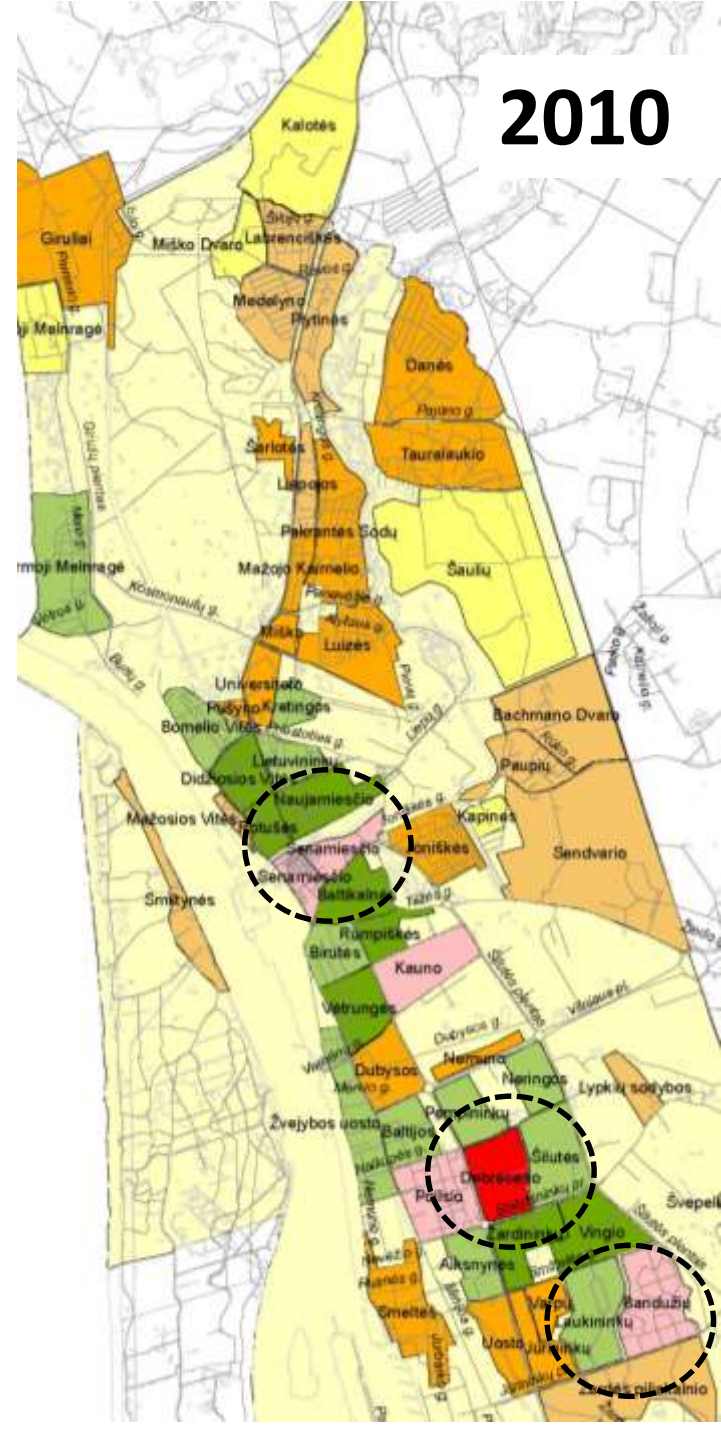




# 2006

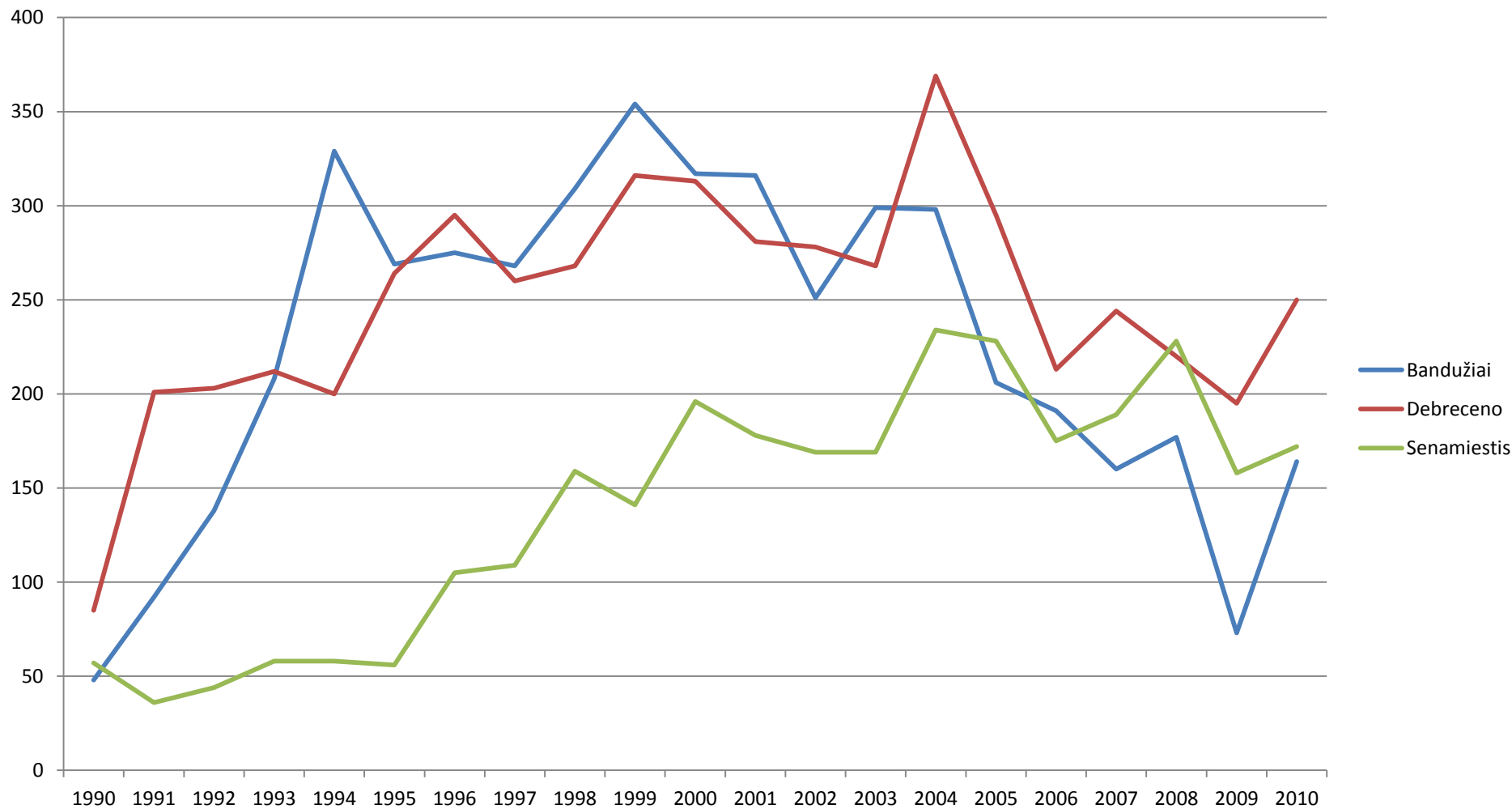


# 2010



## Change of Crimes' Space in Klaipėda City in 1990-2012

### Crime trends at the indicated areas of Klaipeda (1990-2010)





# Individually distilled alcohol: production and selling places

2000



2005

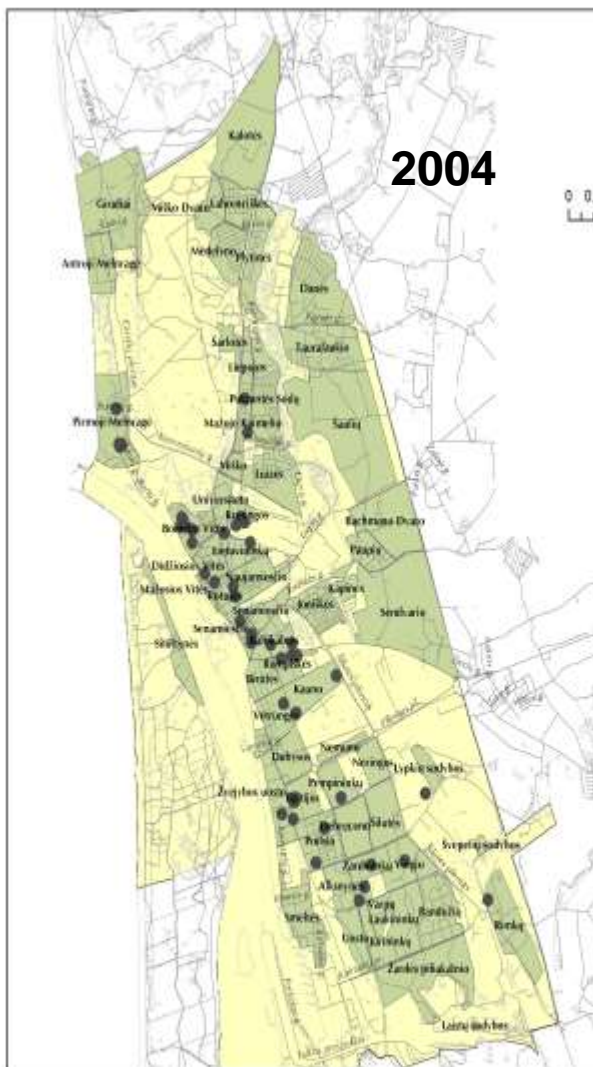


2010

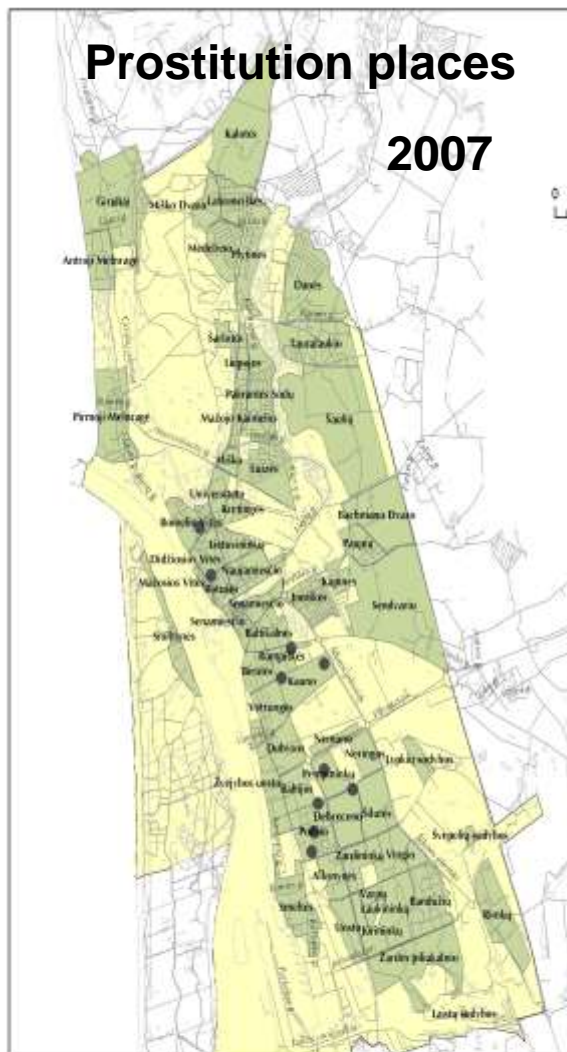




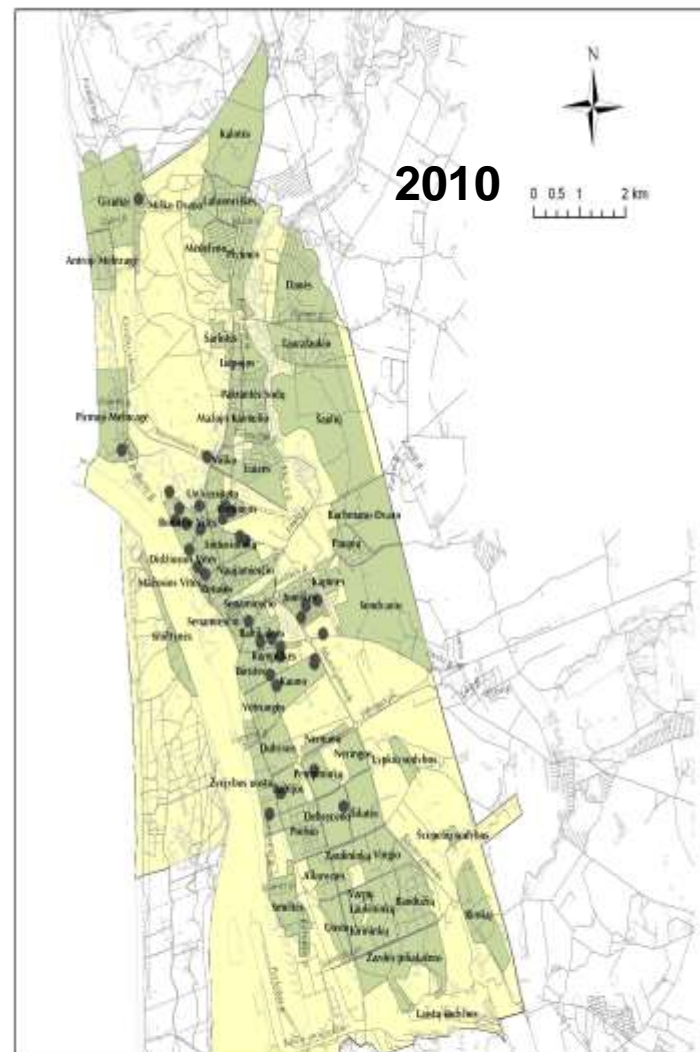
# Change of Crimes' Space in Klaipėda City in 1990-2012



8.1 Žemėlapis. Nusikaltimai, susiję su prostitucija Klaipėdoje, 2004 m.



8.2 Žemėlapis. Nusikaltimai, susiję su prostitucija Klaipėdoje, 2007 m.



8.3 Žemėlapis. Nusikaltimai, susiję su prostitucija Klaipėdoje, 2010 m.

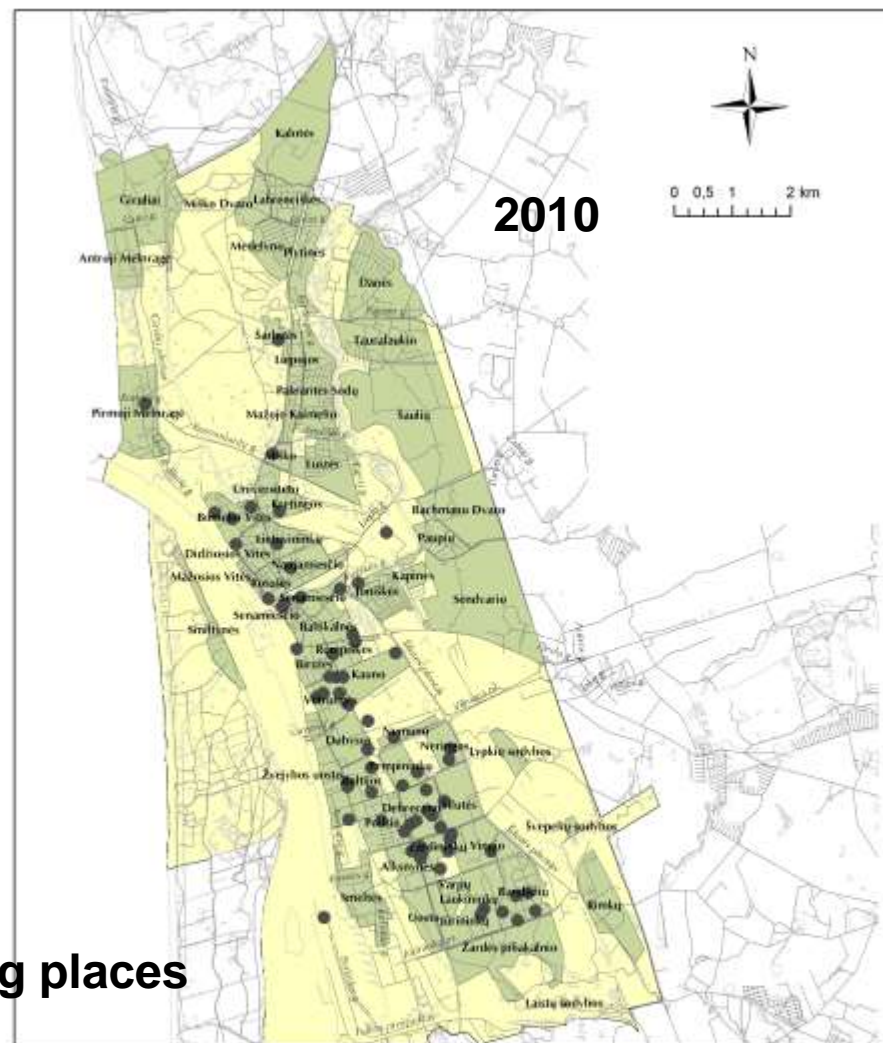
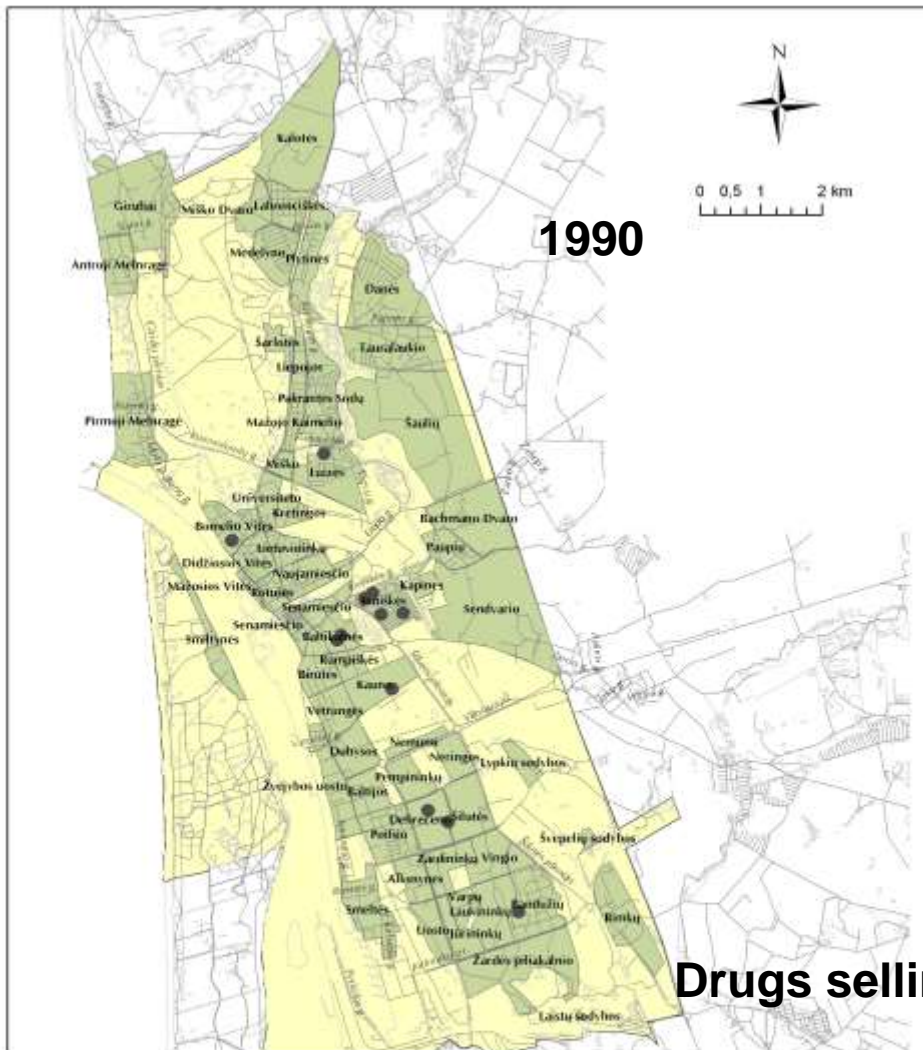
Nusikaltimai, susiję su prostitucija. Užregistruoti nusikaltimai pagal Lietuvos Respublikos Baudkodo kodeksą straipsnius: 308 (Pelnymasis iš kitos žmogaus prostitucijos) ir 309 (Išaukimas į prostituciją).

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# Change of Crimes' Space in Klaipėda City in 1990-2012



7.16 Žemėlapis. Narkotinių medžiagų platinimo taškai Klaipėdoje, 1990 m.

7.23 Žemėlapis. Narkotinių medžiagų platinimo taškai Klaipėdoje, 2010 m.

- Nusikaltimai, susiję su narkotinių medžiagų disponavimu ir platinimu. Užregistruoti nusikaltimai pagal Lietuvos Respublikos Baudžiamojo kodekso straipsnį 232 (Neteisėtus narkotinių medžiagų gamimas ir platinimas).

- Nusikaltimai, susiję su narkotinių medžiagų disponavimu ir platinimu. Užregistruoti nusikaltimai pagal Lietuvos Respublikos Baudžiamojo kodekso straipsnį 259-269 (nusikaltimai ir baudžiamieji nusižengimai, susiję su disponavimu narkotinėmis ar psichotropinėmis, nuodingosiomis ar stipriai veikiančiomis medžiagomis).

# Strange fellowship



Booze

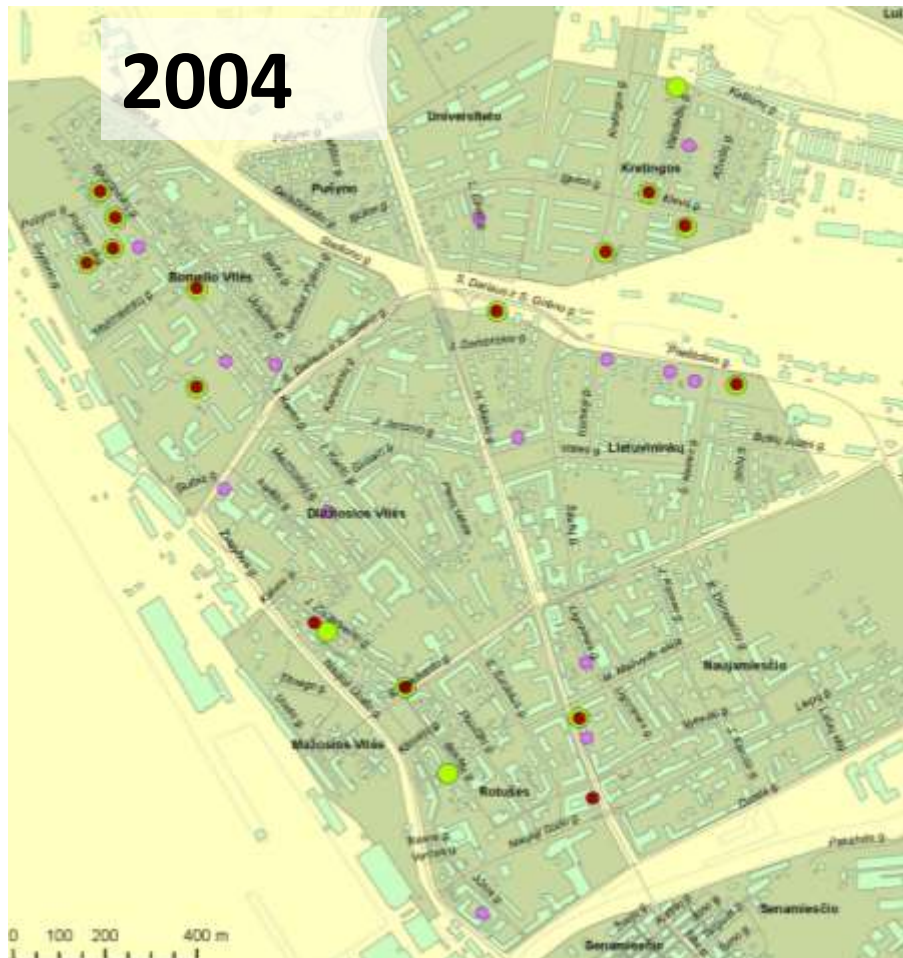


Drugs

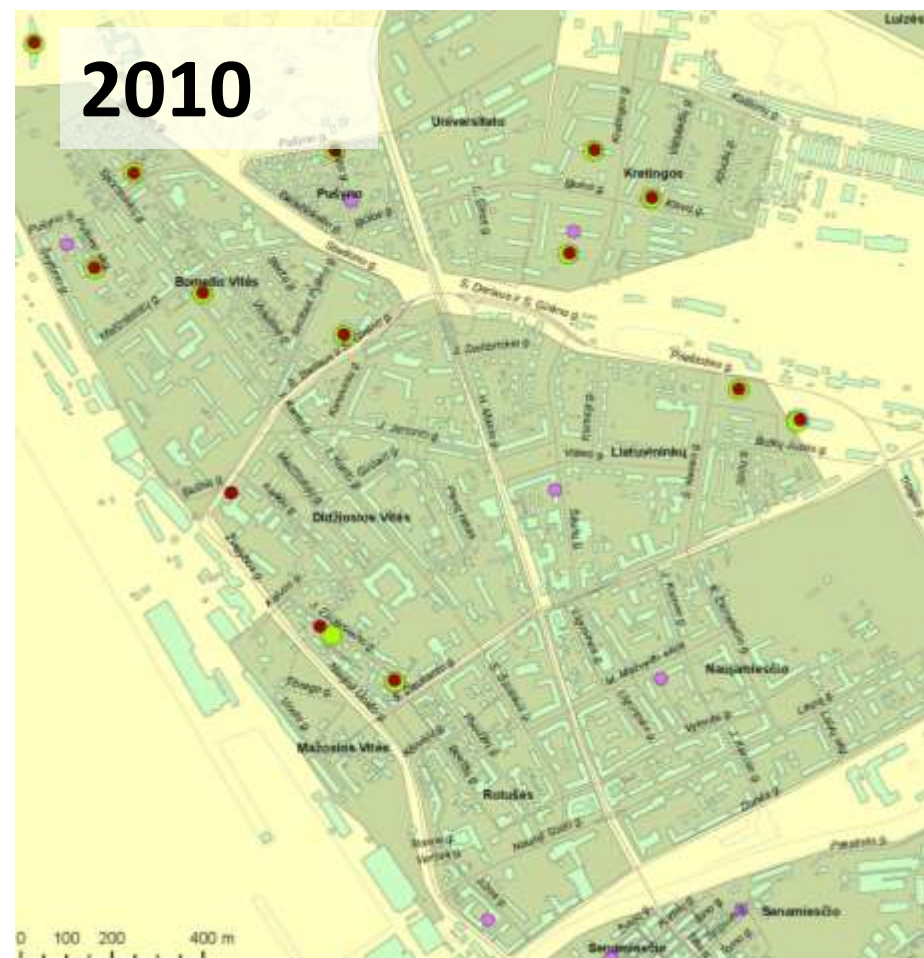


Prostitution

2004



2010



How to explain the observable?

What are the underlying social and territorial factors that account for spatial occurrence or spatial coincidence of crime?



Thank you for your attention!

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