Shading Out The Gun:

How Baltimore City Greenspace Relates to 2013 Homicides

2015 Undergraduate Geospatial Technology Skills Competition

Presented by Molly Finch
Student in the Geospatial Applications Program
Community College of Baltimore County, Baltimore, Maryland
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Baltimore City, Maryland

Murder Rates
Source: FBI, Census, Police Departments

- Chicago
- New York
- Detroit
- Los Angeles
- Philadelphia
- Baltimore
- Houston
- New Orleans
- Memphis
- Dallas

Zadrozny, 2014
Highcharts.com
Null Hypothesis:

There is no correlation between the location of homicides and the quantity (trees vs forest) and quality (mature vs. young/stressed) of urban green spaces.
**Literature Review:**

**Attention Restoration Theory** (Kaplan 1995):
Proposes that exposure to nature can reduce mental fatigue created by the many tasks of modern life that require effortful problem solving and reasoning.

**Mental Fatigue** (Kaplan 1995):
State of irritability that can result in social behavior that is thoughtless and tactless, which can cause small conflicts to spiral out of control.

**Barriers to “crime trips”** (Peters and Efflers 2010):
Barriers to “crime trips”, for example trees as a psychological barrier, do exist but they are most significant when less than 500 meters from the criminal’s origin location.
Project Workflow: Methodology

Find data

Locations for all 2013 Homicides

Open Data Baltimore

BPD Crime Data

Vegetation Data

Open Data Baltimore

Vegetation

Parks

Baltimore City Basemap Features

Open Data Baltimore

City Limits

City Streets

Water Features

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Project Workflow: Methodology

Data Preparation

Sorted Crime Data for 2013

Selected by Attribute
[Description] = ‘Homicide’
Add to current selection
[Weapon]= ‘Firearm’ OR ‘Knife’ OR ‘Other’

Geocoded Homicide Locations

Combined Green Space

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Project Workflow: Methodology

Analysis

500 meter Homicide Buffer

Greenspace within Homicide Buffer

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Results

Homicide and greenspace
- Homocide Occurrences in 2013
  - FIREARM
  - KNIFE
  - OTHER
- Greenspace within Homicide Buffer
- City Streets
- City Limits
- 500 meter Homicide Buffer
- Total Greenspace
- Water Features

Canvas/World_Light_Gray_Reference
Canvas/World_Light_Gray_Base
Questions?

Work Cited:


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