Stewardship of the Public Space
Report for the UBC Vandalism Task Force

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The UBC Vandalism Task Force is a multi-stakeholder committee initiated by representatives from different organizations on campus, including Campus Security, Plant Operations, the Campus Sustainability Office, the Alma Mater Society, the Graduate Student Society and the Department of Health Safety and Environment. The purpose of this committee is the identification and prevention of vandalism at UBC. The Task Force was created as a response to the increase in frequency and severity of vandalism incidents. In August 2003, the Task Force requested a study of vandalism on campus. The study was arranged through SEEDS (Social, Ecological, Economic Development Studies), a program of the Campus Sustainability Office that brings together students, faculty and staff in projects that address sustainability issues. There were three goals for the project. First, collect vandalism data from Plant Operations and Campus Security and create a centralized database of vandalism at UBC. Second, create a GIS map of vandalism at UBC. Third, perform a descriptive analysis of the spatial distribution of vandalism on campus.

Methodology

Identification of Needs

During the summer and early fall of 2003, a series of meetings were held with the client organizations. These served to identify the information they wanted the study to provide. It was determined that the project would be a base study of vandalism at UBC, including the location, types, the most common targets and the presence of offensive content. By collecting data from a one-year period, the study would

identify patterns in the chronological and spatial distribution of vandalism, which would later serve the planning of anti-vandalism strategies. This base information would also set a benchmark to evaluate the impacts of the Vandalism Task Force's campaigns. The stakeholders want to update the information in 2004 in order to closely monitor the phenomenon. It was agreed that the study would create a GIS map that could be used by the client organizations and a series of maps showing the distribution of vandalism on campus.

Data

I. Vandalism Data

At least four departments collect vandalism-related data at UBC: Campus Security, Plant Operations, Classroom Services and Housing. While there is considerable overlap between the datasets, each department collects information from a different area of campus. Campus Security has information for campus wide incidents that present a direct threat to the security of university members, violate any appropriate use of the public space or have an offensive nature. This department also records information on break-ins, thefts and trespassing. The UBC Plant Operations department is in charge of the repair and maintenance of campus facilities. It receives calls from all over campus to clean, repair or replace vandalized facilities. Their data set includes works done indoors and outdoors. The data from Classroom Services and UBC Housing was not included because of time constraints or because the data was not provided.

II. Base Map

The base map of the UBC Campus was obtained from Erin Kastner, a geospatial analyst working for UBC Facilities. This map is a simplified

version of the campus map provided by the UBC Records Office. This map was selected because it was up-to-date and it offered a less cluttered alternative to the excessively detailed Records' map. For more information please contact Erin Kastner at (604) 822-1333 or

UBC Vandalism Database

Vandalism data from the two organizations (Campus Security and Plant Operations) was put together into one single database called the UBC Vandalism Database. The data sets from both organizations provided the following information for each incident:

- ID Number
- Date
- Address
- Description of the event

After the two databases were integrated, the data was categorized. The data was organized into the following five categories:

1. Types of vandalism: graffiti, fire, damage and breakage and other types.
2. Most vandalized targets. The most common targets of vandalism were identified, including windows, manholes, doors/fences/gates, landscaping, equipment, streetlights and other targets.
3. Location of the incident: outdoors or indoors.
4. Ownership of the affected property: university or private property.
5. Incidents with potential hate or bias.

GIS Map

Seven hundred and four vandalism incidents were digitalized using Arc GIS. The location of the incidents was determined from the described addresses provided by Campus Security and Plant Operations. Given that in many cases this information does not offer an exact location (e.g. which face of a particular building) the incidents were digitized in different positions on the respective buildings. For example, if five vandalism incidents were reported to have taken place in the Chemistry Building, they were digitized at random locations on top of the building.

Mapping Vandalism

The data was queried to display the spatial distribution of vandalism on campus, and a series of layouts were created in Arc View 3.3. This was the software chosen by the client organizations. The following maps were created:

1. Vandalism at UBC 2002/03
2. Vandalism during the summer
3. Vandalism during the winter
4. Vandalism on university property
5. Vandalism on private property
6. Indoor vandalism
7. Outdoor vandalism
8. Exterior/Outdoor Vandalism
9. Types of Vandalism at UBC:
    a. Graffiti vandalism
    b. Breakage and damage vandalism
    c. Fire vandalism
    d. Other types of vandalism.

10. Common targets of vandalism at UBC:
    a. Vandalized equipment
    b. Vandalized manholes
    c. Vandalized streetlights
    d. Vandalized door/gates/fences
    e. Vandalized signs
    f. Vandalized windows
    g. Other targets
11. Potential hate and/or bias vandalism

Analysis

The spatial patterns on the maps are described below. For additional spatial analysis, please refer to Miro and Burton's report[1].

Results

Vandalism incidents have a higher occurrence in the squared area within Marine Drive to the north and to the west, Thunderbird Boulevard to the south and Wesbrook Mall to the east. Outside this area, other highly vandalized sites include the Thunderbird Stadium, the John Owen Pavilion, the James Mather Building and the Acadia Community Centre. Within the squared area, the distribution of vandalism has a clustered pattern, i.e. some areas/buildings present higher rates of vandalism, while others are not affected. Some of the most vandalized sites include the Plant Science Green House, Nitobe Gardens and Henry Angus Building (see table 1).

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[1] Miro, A. and Burton, J. "Using GIS to Map Campus Vandalism: Towards a Predictive-Preventive Approach." For a copy of the report please contact Sue Brown at sbrown@security.**ubc**.ca.

Table 1. Most Vandalized Sites.

Building Name	Number of Incidents
Plant Science Green House	23
Nitobe Gardens	22
Henry Angus Bldg.	17
Hennings Bldg	15
Buchanan Bldg.	15
Medical Sciences	14
Student Union Bldg.	14
Leonard S. Klink Bldg.	13
Civil and Mechanical Engineering	13
Mathematics Bldg.	12
Chemistry Bldg.	12
Header House	11

Chronological Distribution of Vandalism

Most of the vandalism took place during the fall and winter terms. There is no apparent difference between the distribution of summer and fall/winter vandalism. During the summer, vandalism tended to take place in the same locations; however, the number of incidents only accounted for 23% of the total. Two exceptions are the Thunderbird Stadium and the George Curtis Building which were vandalized on more than two occasions, and only during the summer term.

Affected Property

With respect to the ownership of the affected property, the great majority of vandalism incidents took place on university property. Vandalism to private property accounted for only 1.8% of the total number of incidents. Cars were the most commonly affected private property followed by bikes.

Exterior vs. Interior Vandalism

At UBC, most of the vandalism took place indoors (82.3% of the total number of incidents). Indoor vandalism is defined as any incident occurring inside the building, including window breakage. Exterior vandalism is defined as taking place on the streets, fields and any other outdoor area. It is important to note that the rate of indoor/outdoor vandalism may be higher once the data from UBC Housing and UBC Classroom Services is added.

Most Common Types of Vandalism

Approximately 70% of the incidents resulted in damage to or breakage of the vandalized object. Graffiti was the second most common type of damage accounting for 14.6% of the total number of incidents. Other types of vandalism was the third most prevalent type (23%). Finally, fire vandalism accounted for only 0.9% of the total.

Potential Hate and Bias Vandalism

The data provided by Campus Security and Plant Operations only identify very few incidents that were clearly hate and bias. In all other cases, it was very difficult to determine from the data provided whether the incident had hate content. Because identifying hate and bias vandalism is a priority of the Vandalism Task Force, a map of potential

hate/bias incidents was created. The incidents that were considered as potential hate and bias were those who match the following criteria:

- Display offensive content
- Target a site that clearly represents a certain culture. In particular, vandalism occurring in the 'Asian area' of campus was included,for example, vandalism against the Choi Building or Nitobe Gardens.
- Incidents labeled as racist, homophobic or other biases in the provided data.

Discussion

Before discussing the findings of the study it is important to point out some of the most evident sources of error in our data collection and analysis.

Errors in Data Collection

The data provided by Plant Operations and Campus Security had some overlap. Often an incident would be initially reported to Campus Security because it presented a safety threat, and then this organization would make a trouble shoot call to Plant Operations in order to request that the damage be repaired. As a result, both organizations would record the incident with similar or different dates. We tried to minimize this error by carefully looking at those incidents occurring in the same location and around the same date. We looked closely at the description of the incident to identify double-entries.

A second source of error was data categorization. In some cases, the description accompanying the incidents limited a straightforward categorization of the incident. Some incidents could fall into two different categories, for example cases with multiple targets or where many types of vandalism were identified. In these cases, additional effort was made to determine the best category, including further consultation with the client organizations. Finally, given the size of the database, the digitalization of the incidents was done by a team of three people. While there was extensive communication and agreement between the team in the establishment of criteria and decision making, errors may appear because they were working independently.

During the digitalization process the following sources of error were identified. First, there were positional uncertainties associated with each point. The scale at which the map is accurate is limited. In most cases, the data did not identify the exact location of the incident. In other cases, we did not know the exact location of a particular room or a dumpster outside a building. Hence, we placed the point on a random location on the building, or just outside of it. The same applied to street signs, (i.e. stop signs). We were often given either the intersection or the road along which a street sign had been removed, written on or damaged, but never the exact location, (i.e. which one of the four stop signs at the Wesbrook-University Boulevard intersection had been removed). In these cases as well, we would randomly pick a stop sign, bringing positional uncertainty into the vandalism map.

Vandalism at UBC

The Vandalism Task Force has extensive expertise for drawing out conclusions about vandalism at UBC, its causes and distribution. Therefore, the present study will limit its discussion to the observed patterns, because its main purpose was to gather the information and create the maps for criminology experts to analyze. An early interpretation of the results showed that the spatial patterns of vandalism encountered at UBC did not match the previously existing assumptions of the distribution of this phenomenon in space.

- While vandalism at UBC was described as occurring in corridors between the liquor outlets and the residences, our results show that the incidents tend to occur in clusters around certain buildings. Some buildings are highly vandalized (see table 1), and others are not.

- Some highly vandalized sites are in the corridors between Koerner's Bar, The Pub and the student residences, but others are not. For example, the Choi Building and the Plant Science Greenhouse are on the path between Koerner's Pub and the students residences, Totem Park, Thunderbird and Ritsumeikan. In contrast, Nitobe Gardens is not on the pathway, and it is one of the most vandalized sites.

- The fact that most of the vandalism incidents took place during the academic year and within the area with highest concentration of students weakens the thesis that most vandalism at UBC is caused by 'outsiders' coming to Wreck Beach. The peaks of vandalism took place during October 2002 and March-April 2003.

- Not only location, but also the individual characteristics of the building seem to play an important role on its vulnerability to vandalism. The glass structure of the Plant Science Greenhouse makes it particularly vulnerable to vandalism acts. In addition, the relatively isolation of Nitobe Gardens has encouraged students to use it as a place to hang out after hours or as drinking spot.

- The information in the Plant Operations and Campus Security databases does not seem to permit any conclusion about hate/bias vandalism. If this is a concern for UBC, then additional effort should be made to identify hate and bias when recording the incidents.

Additional spatial analysis and conclusions can be found in Miro and Burton's report.

The present study constitutes a baseline for the study and monitoring of vandalism at UBC. The data can be updated in subsequent years to evaluate the impacts of the Task Force's campaigns. The study also demonstrates the value of the spatial visualization of social phenomena. The maps offer additional insight on the patterns of vandalism at UBC, as well as the correlation between the most vandalized sites and other spatial features. The project is an example of the importance of cartographic information in sustainability studies.