

catalyst

A LOCAL PARTNERSHIP IMPROVING
COMMUNITY SERVICES

COLCHESTER BOROUGH HOMES: COMMUNITY PLAN ANALYSIS

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1. Introduction

This report was commissioned by Colchester Borough Homes (CBH) and the University of Essex (UoE) HEFCE funded Catalyst Project to assist with the development of the CBH Community Plan. The Community Plan sets out to empower members of the community and CBH staff to recognise domestic abuse and to report suspicions to CBH. Having this information will not only enable early intervention but improve the capacity within the community. This report aims to provide a baseline from which CBH can plan their interventions and target their resources.

A link has been identified between reports of anti-social behaviour (ASB) and domestic abuse, with 40 per cent of tenants who have suffered Domestic Abuse having had complaints made against them for Anti-Social Behaviour (CIH, 2018). With other research finding that people experience abuse for an average of three years before engaging with support services (Safelives, 2015), housing providers have found that they are ideally placed to identify domestic abuse and act as a first point of contact. Key to pushing this work forward has been the Domestic Abuse Housing Alliance's (DAHA), which was set up as a partnership between three agencies (Gentoo, Peabody and Standing Together) aimed at improving the housing sectors response to domestic abuse (DAHA, 2018). CBH are keen to take a proactive approach in identifying victims earlier, which will enable them to provide support and help victims to escape their abuse.

The *Young Colchester: Life Chances, Assets and Anti-Social Behaviour* report, another Catalyst Project funded collaboration between Colchester Borough Council and the University of Essex, found that police reported ASB and CBH ASB cases had quite different geographic distributions. This report expands upon this work and offers CBH a baseline from which they can target future services and interventions.

2. Aims and objectives

The CBH Community Plan, which was launched in April 2018, encourages the community to report anything they suspect is or might potentially be domestic abuse and is flagged as raising cause for concern. For example, the housing maintenance workers might spot a door that has been kicked in. In order for CBH to target their resources to the correct locations, this project provides CBH with an in-depth analysis of the ASB data that they collect, to provide a baseline for development of the Community Plan.

This report sets out to:

- Increase CBH's understanding of their ASB cases
- Identify the geographical concentration of ASB cases
- Identify hotspots in the different categories of ASB (including domestic abuse)
- Identify the risk factors present in areas where victimisation is highest
- Identify individual characteristics of those most at risk of ASB

3. Data and methodology

3.1 Data

CBH provided ASB data from January 2016 to February 2019. In total there were 1,311 incidents reported in this time frame. The dataset included the date that the case was logged, the case address, the recorded about address (this was sometimes different from the case address), the type of case, the category of case, the age, gender and ethnicity of the person who the case was received by (for up to two individuals), the age, gender and ethnicity for who the case was about (for up to two individuals), property type, swipe number, household size, arrears, tenure type and tenure status. The data was cleaned and where there was no recorded postcode (using the recorded about address field), but there was address information, the postcode was manually looked up. Where no postcode was in the recorded about address field and no further address information was available the postcode of the case address was used. Where the case was recorded to Rowan House the postcode was not used. In total, 1,294 cases had a useable postcode. Repeat incidents were calculated using the swipe code number.

Police recorded ASB was downloaded from data.police.uk for the same time period as the CBH data. This open source data does not record the date or time of the incident, so only the month could be used in the time analysis.

The risk analysis used the Index of Multiple Deprivation 2015, housing stock data provided by CBH and other census data available on the Office for National Statistics (ONS) website. It had been hoped that Mosaic data could be used for the individual level risk analysis, but unfortunately licensing issues prevented the sharing of this data with the University. It would be recommended that CBH continue to pursue access to this data for future analysis.

3.2 Methods

The geographic analysis was carried out using ArcGIS, the time analysis in Excel and the statistical analysis in Stata. In some of the maps data has been aggregated to the Lower Super Output Area (LSOA) level. This is census geography and approximately 1,500 people live in each LSOA. Using LSOAs allows other datasets such as population and deprivation data to be added to the maps and analyses consider risk factors and predictors. Emerging hotspot analysis was carried out using Time Cubes in ArcGIS. The data was broken into monthly time bins and the reference time was the end date of the data, meaning the maps that were produced were identifying how the spatiotemporal pattern had changed in the last month based on trends in the previous three years.

4. Results and discussion

4.1 Type of cases

Of the 1,311 incidents of ASB reported to CBH between January 2016 and February 2019 Figure 1 illustrates that drug activity was the category with the highest number of incidents. This was followed by frequent disturbances, threatening or abusive behaviour, harassment and domestic abuse.

Figure 1: Number of cases of ASB by category. N=1,311

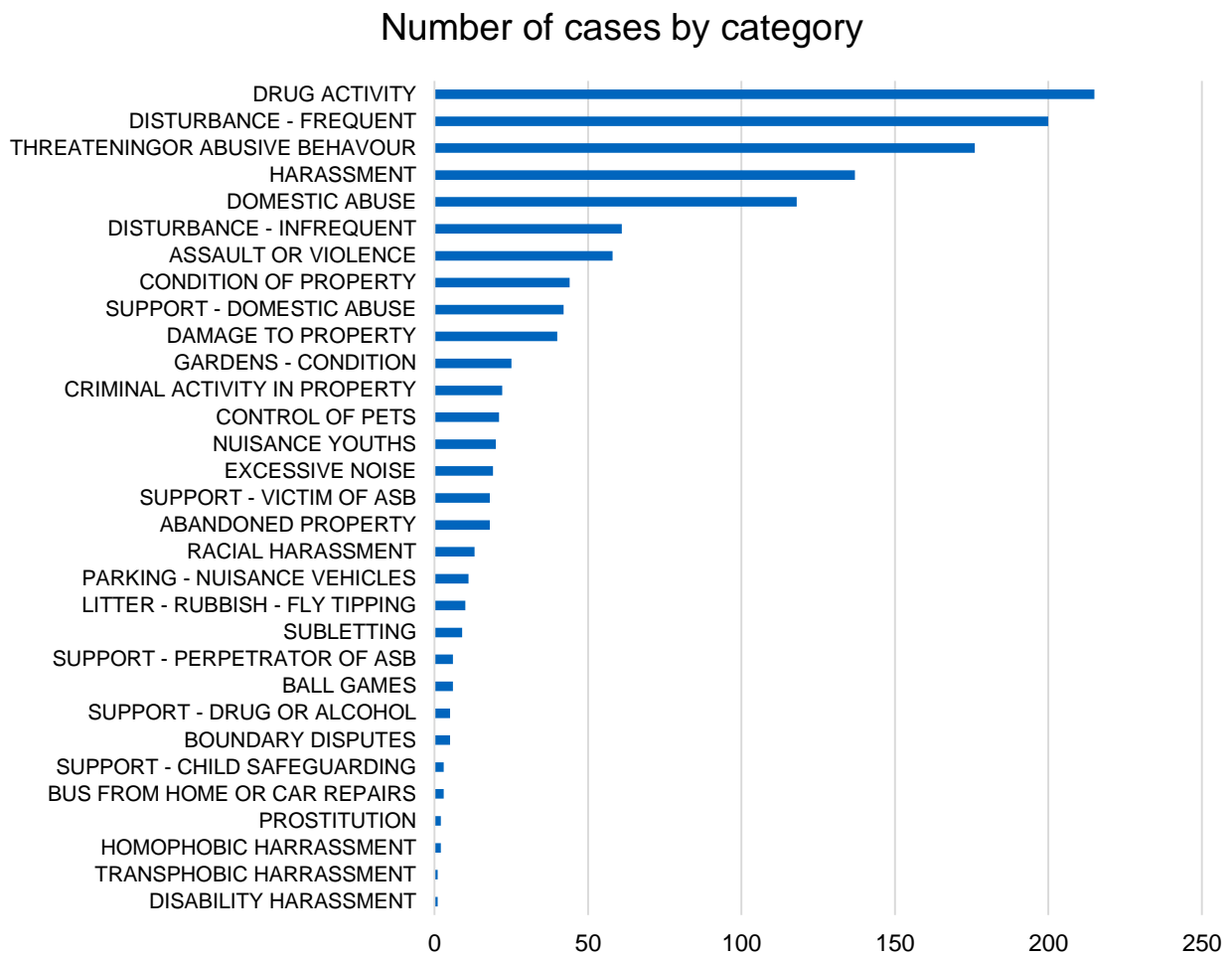


Figure 2 shows that 85% of all cases were complaints, the remainder of cases were mainly private (8%) or support cases (6%).

Figure 2: Proportion of incidents of ASB by case type. N=1,311

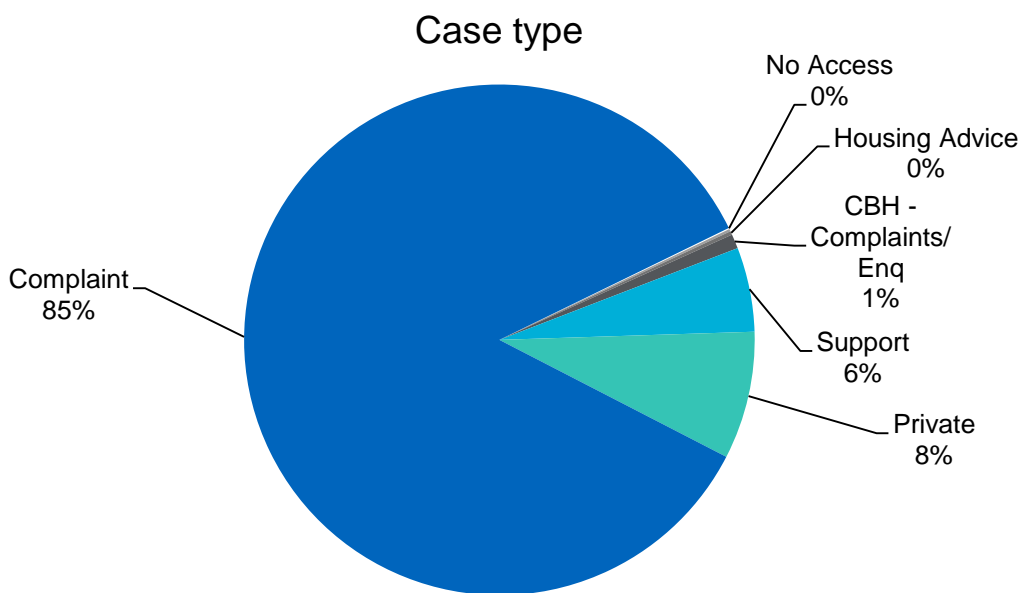


Table 1 identifies repeat cases at the same property based on the swipe number of the property. Overall, 29% of cases were repeats. Not all cases had a swipe number, but CBH could do further analysis by using the name of the victim/perpetrator (not available for this analysis).

Table 1: Repeat properties

Number of incidents recorded about the same individual property	Number of properties
8	1
7	1
6	4
5	4
4	18
3	46
2	136
1	513

4.2 Temporal analysis

Figure 3 (page 6) shows that the majority of cases are logged on a weekday, with slightly more cases recorded on a Monday, which may well reflect incidents that occurred over the weekend that were logged when the office opened on Monday. In the future it may be more beneficial to collect information on when the problem occurred. This will enable resources to be deployed at the opportune time. It would also be useful to collect the time of day that the problem occurred.

Figure 3: Day of week case logged. N=1,311

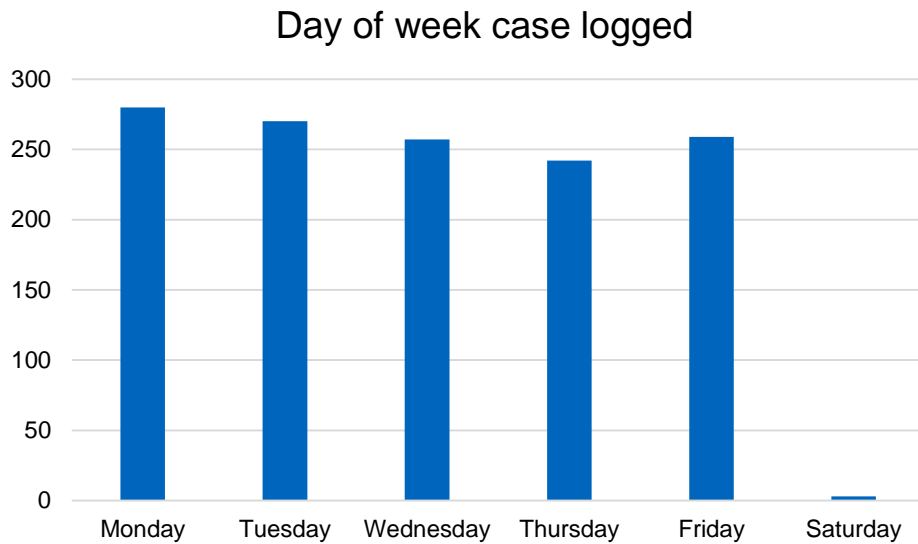


Figure 4 compares police reported ASB to CBH cases. In terms of volume, the numbers reported to the police are a lot higher and there is a clear seasonal trend, with more ASB reported in the summer months. There was also an increase in November 2017.

Figure 4: Month ASB reported. N=1,311

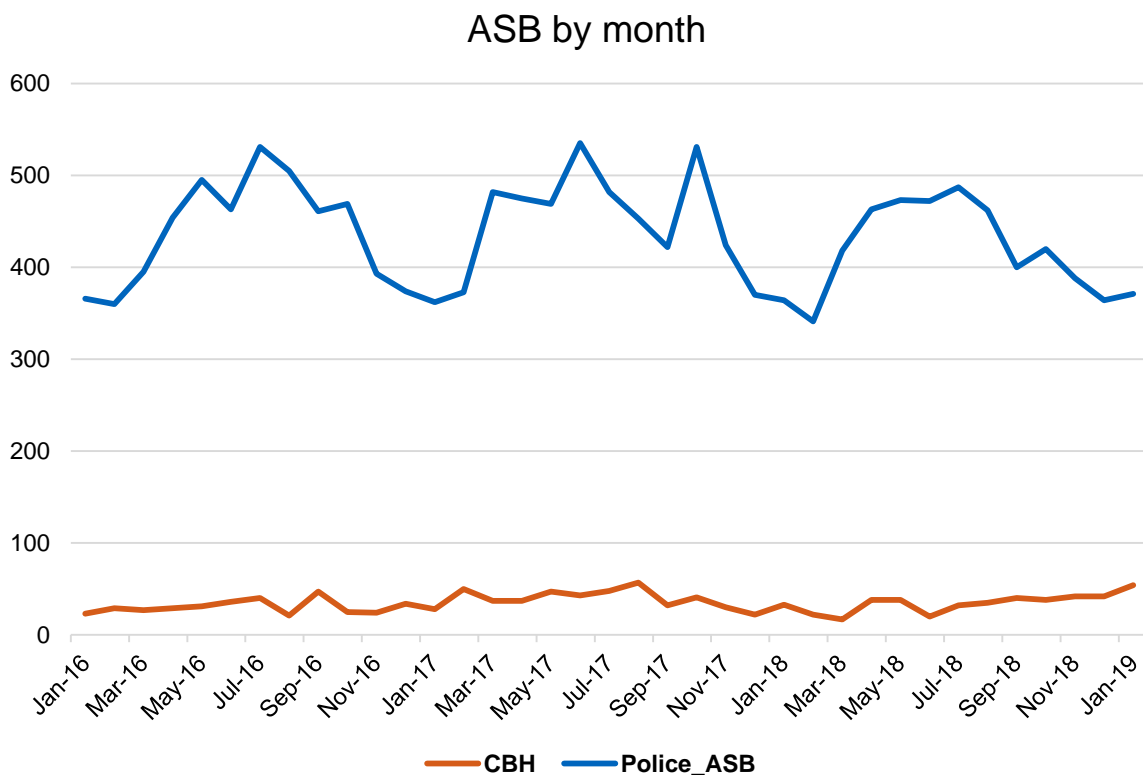


Figure 5 shows that the CBH has a less seasonal pattern, but the highest number of cases were recorded in August 2017. After this the number of cases reduced again, but since June 2018 they have steadily increased and 54 cases were recorded in 2019 (up to February).

Figure 5: Month ASB reported for CBH cases. N=1,311

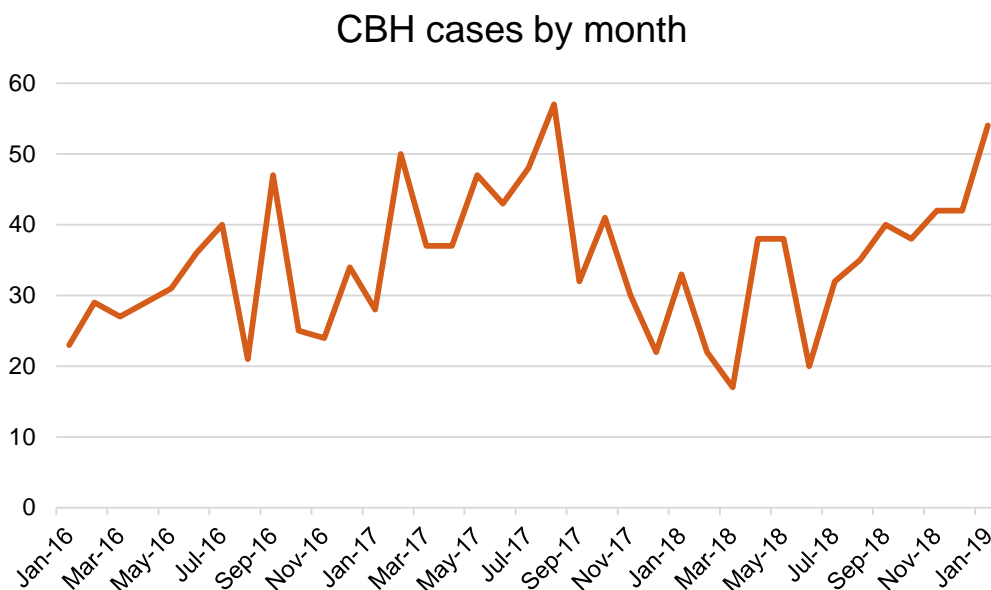
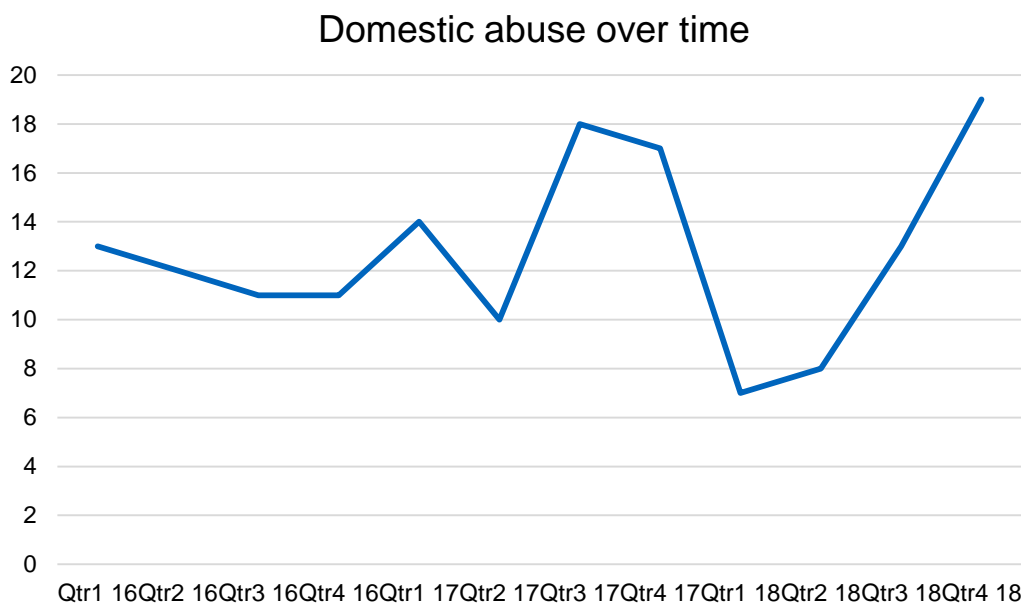


Figure 6 shows the change in the number of domestic cases over time. There was a peak in reported cases in the third quarter of 2017, before levels declined again to their lowest in the first quarter of 2018. Since then there has been a steady increase in reported cases, with the highest level across the whole time period in the final quarter of 2018. It would be useful to add the dates of any new interventions or campaigns to this graph.

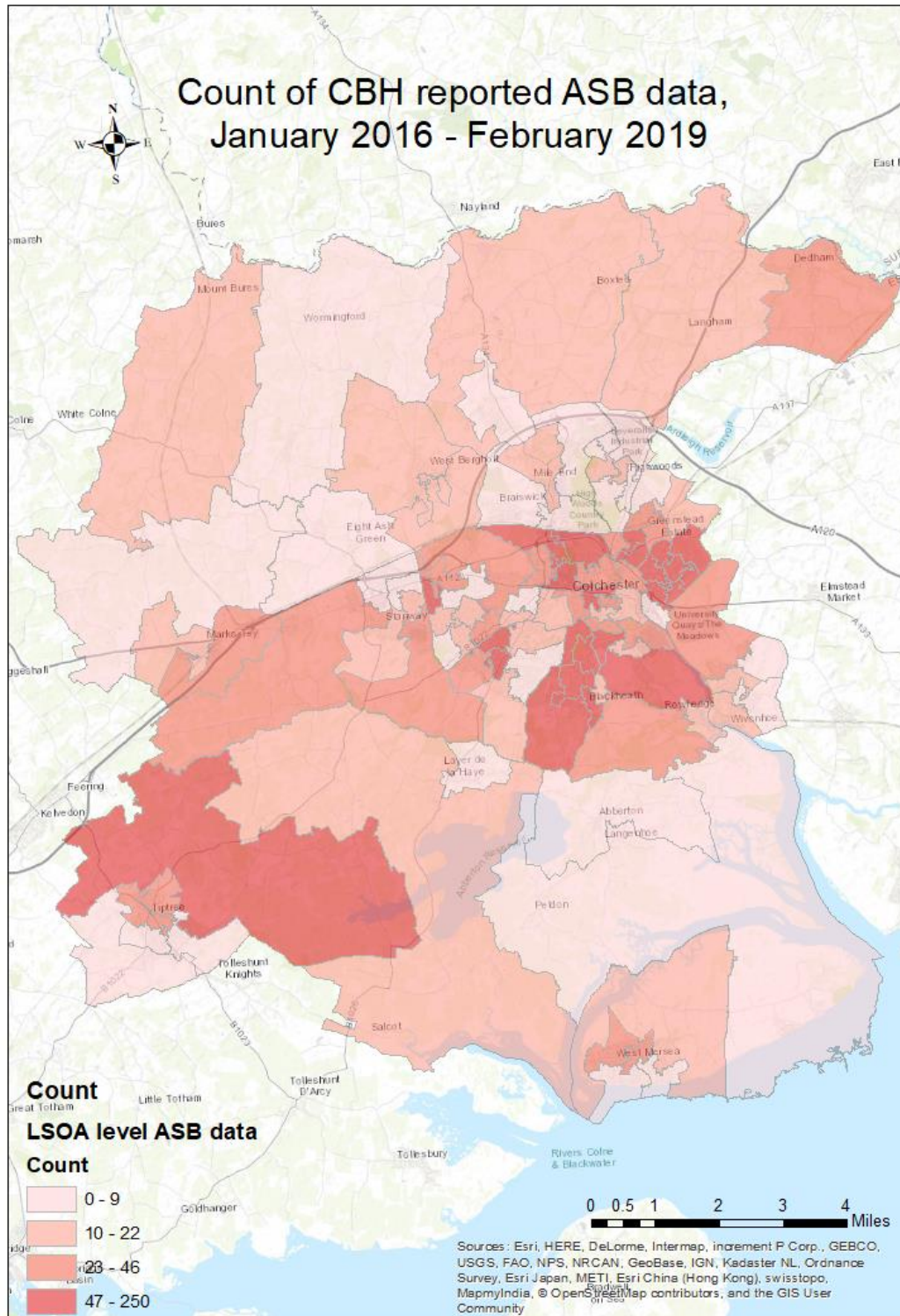
Figure 6: Domestic abuse reported to CBH by quarter. N=1,311



4.3 Spatial analysis

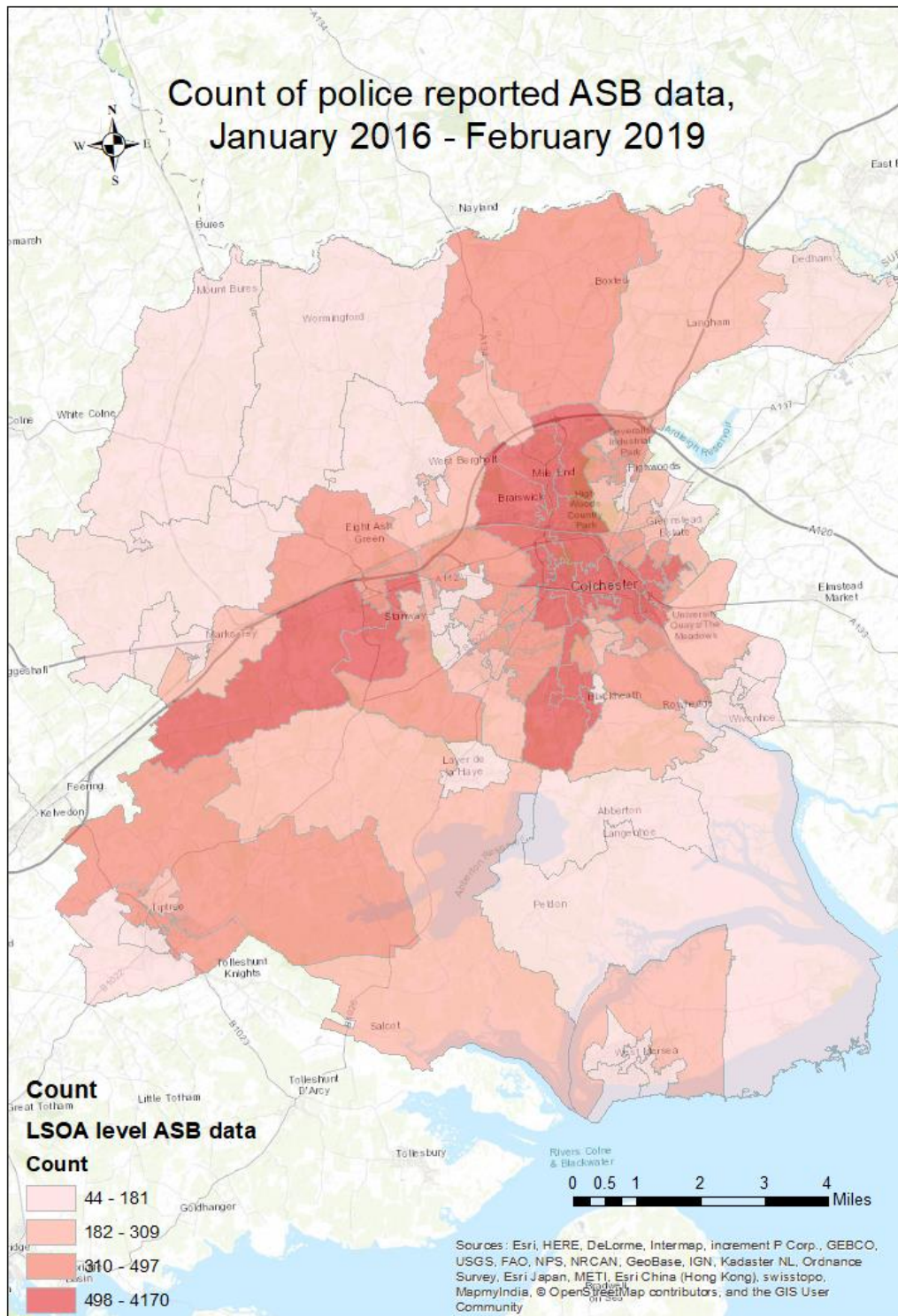
The map in Figure 7 identifies the areas with the highest concentration of reported cases. The Lower Super Output Areas (LSOAs) with the top 5 highest counts of ASB were all located in the Greenstead area.

Figure 7: Map of the count of CBH ASB cases by Lower Super Output Area (LSOA). N=1,294



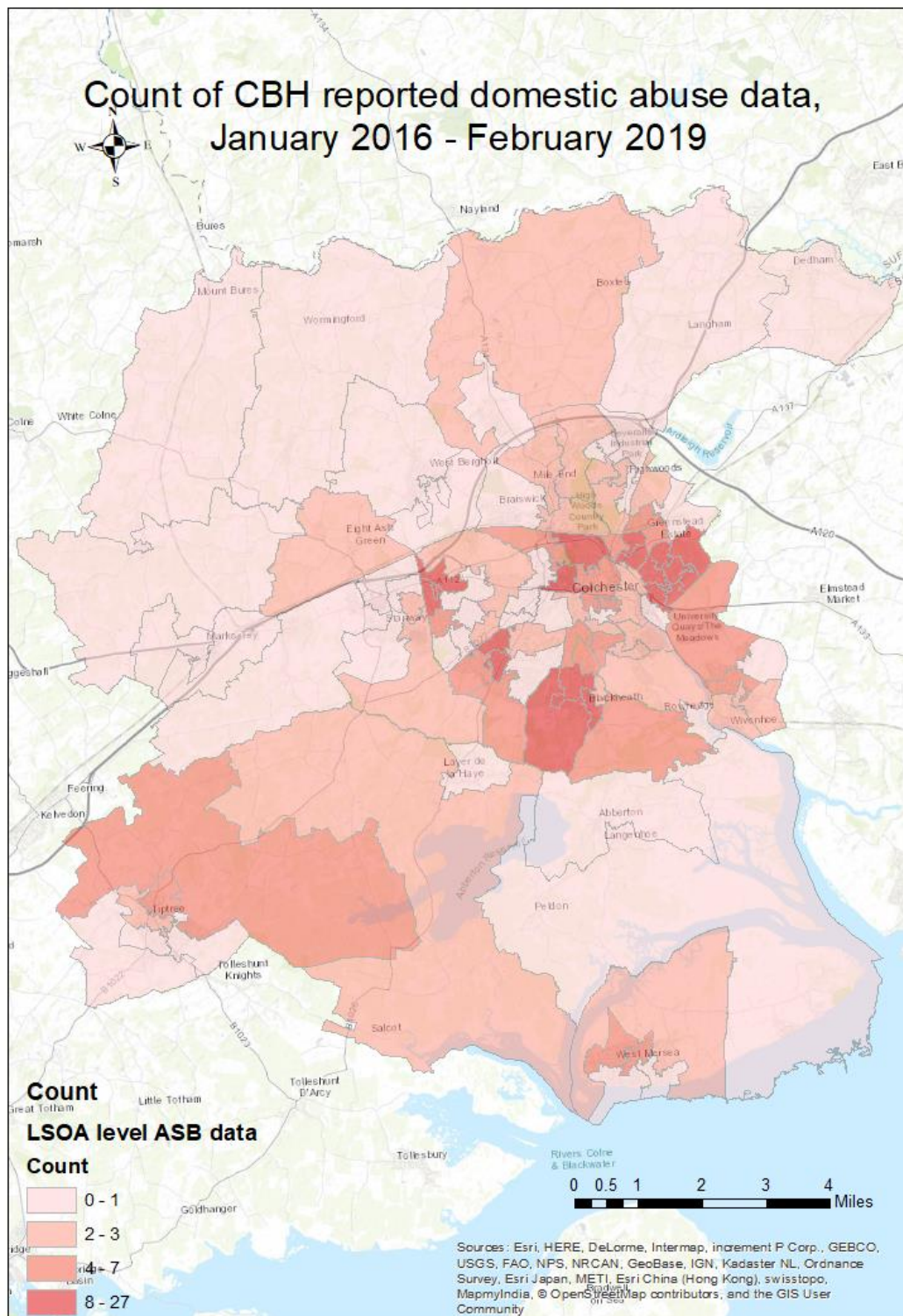
On the other hand, when mapping police reported ASB, Figure 8 shows the LSOAs with the top 5 highest counts are all located in the town centre. It is likely that the trend is partially attributable to the location of the CBH housing stock, but it could also indicate the different nature of ASB, with police reported abuse more likely to be in public places, compared to CBH in the private sphere. It would be interesting to explore this in more depth by requesting the more detailed ASB data from Essex Police. It would also be interesting to see whether people are more likely to report ASB to CBH or to the police in particular geographic locations.

Figure 8: Map of the count of police ASB incidents by Lower Super Output Area. N=16,067



The map in Figure 9 identifies the areas with the highest concentration of reported cases of domestic abuse. The LSOAs with the top 5 highest counts of ASB were all located in the Greenstead or the Monkwick areas.

Figure 9: Map of the count of CBH DA cases by Lower Super Output Area. N=156



The map in Figure 10 identifies the statistically significant hot and cold spots of ASB within Colchester. Greenstead and Monkwick are the only hotspots and Mile End and the rural area including Boxted are cold spots. The rest of the areas do not have any statistically significant clustering.

Figure 10: Map of hotspots of CBH ASB cases by Lower Super Output Area. N=1,294

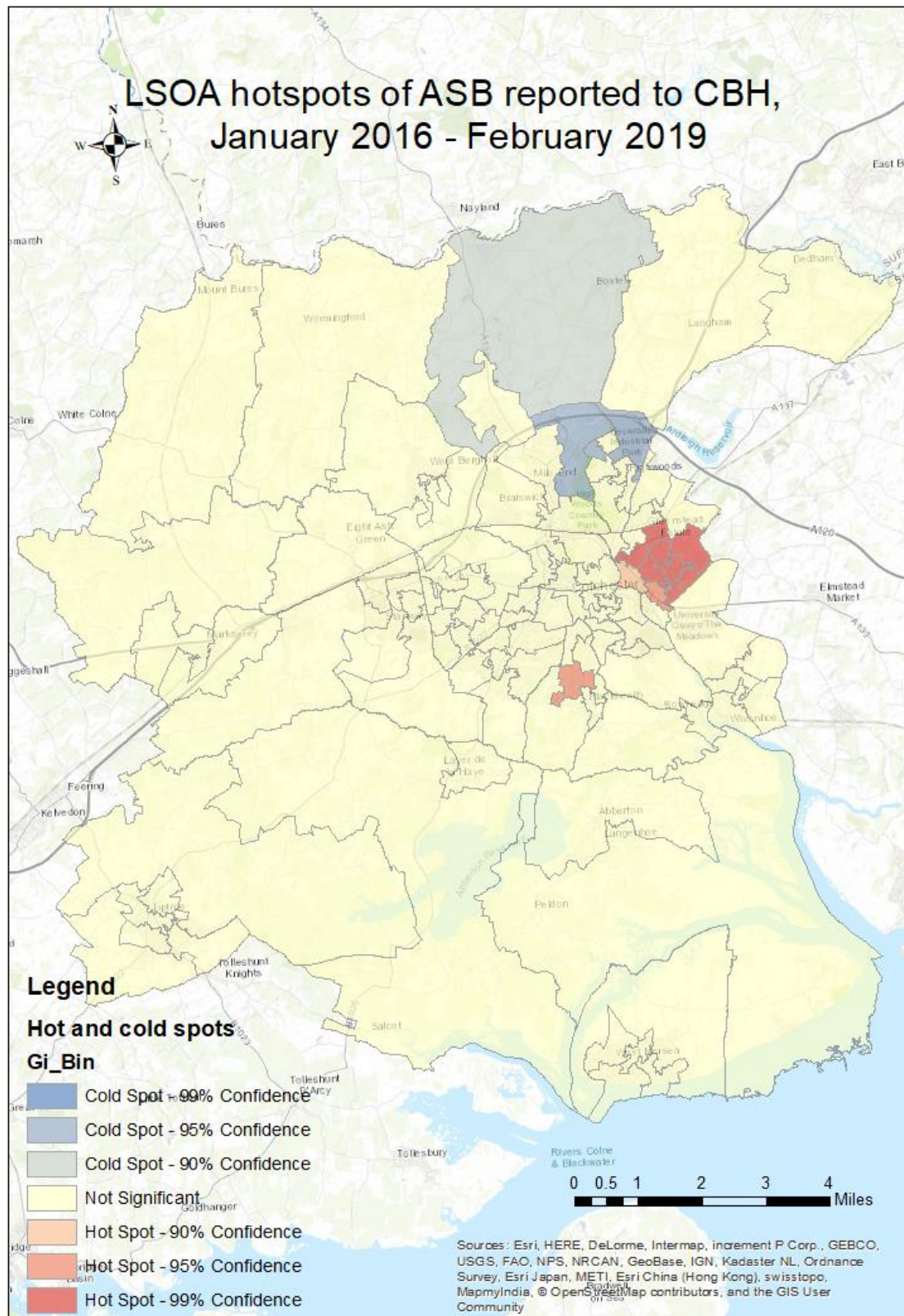
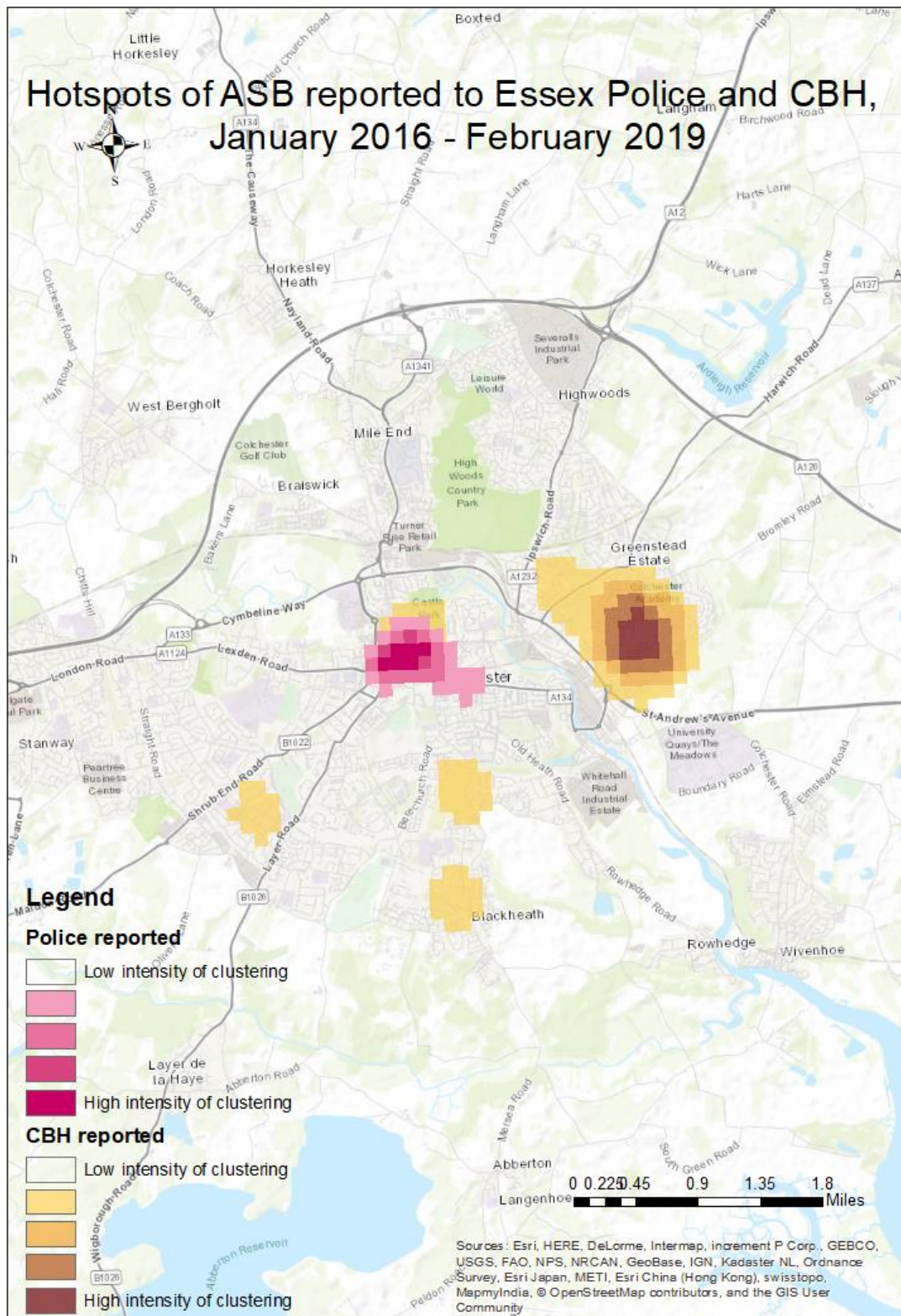


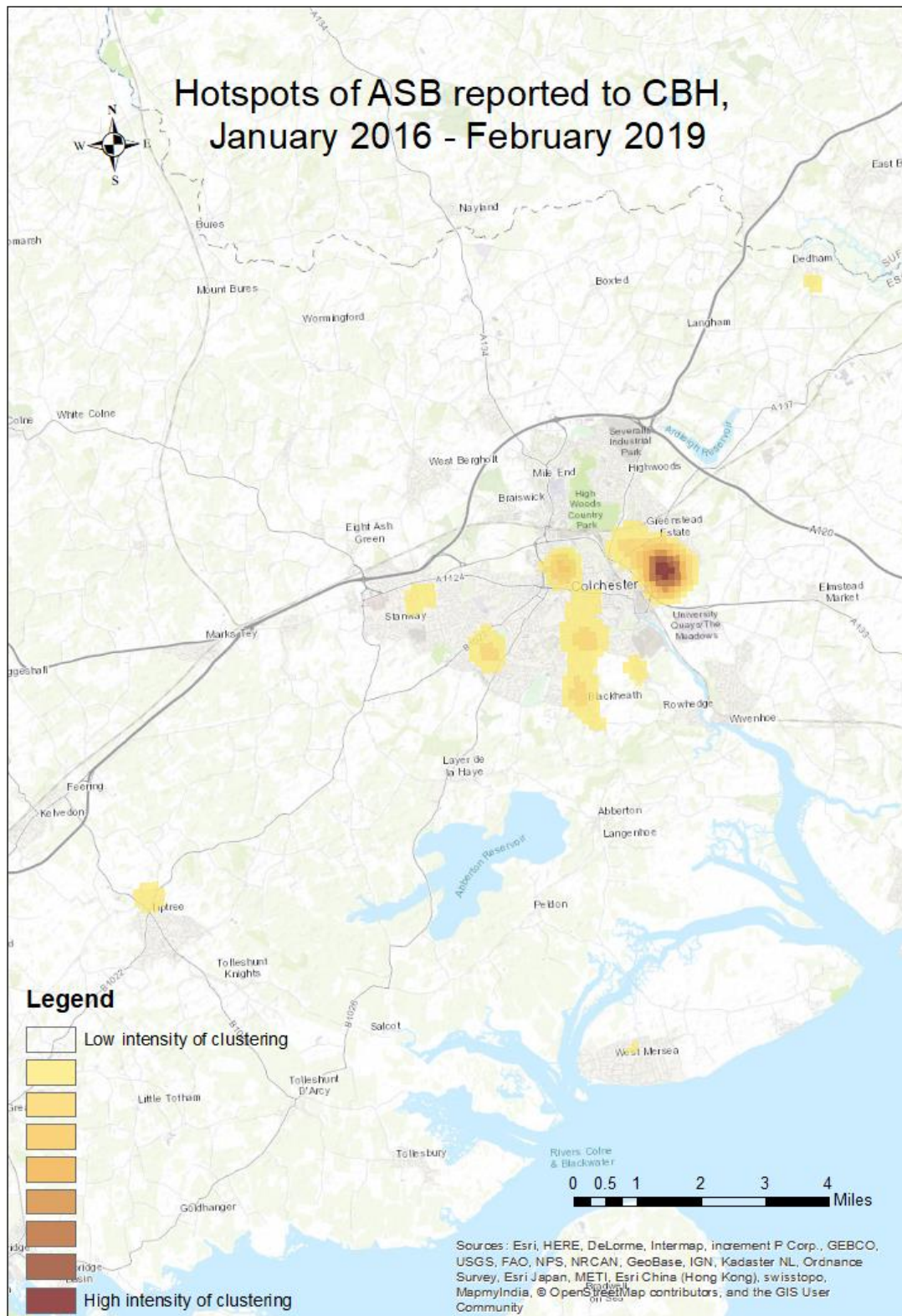
Figure 11 identifies the variation in hotspots of ASB between those reporting to the police and to CBH. As with the count maps the largest hotspots for the CBH ASB are in Greenstead (orange/red) and in the town centre for police reported ASB (in pink). There are also smaller CBH hotspots on Mersea Road, Monkwick and Gosbecks.

Figure 11: Comparison of hotspots between Essex Police and CBH reported ASB. N=16067 (police), 1294 (CBH)



Zooming out to see the whole of the borough, Figure 12 shows there are also small hotspots in Dedham, Tiptree and Stanway.

Figure 12: Hotspots of CBH reported ASB. N=1294



The next series of maps identify where the hotspots of the different categories of ASB are concentrated. Having this information should help to inform the type of interventions that are needed to tackle the different types of ASB. Figure 13 finds that the hotspots of drug activity are concentrated in Greenstead, Mersea Road and Monkwick. It would be interesting to see how these hotspots correspond to police reported drug offences.

Figure 13: Hotspots of CBH reported drug activity. N=214

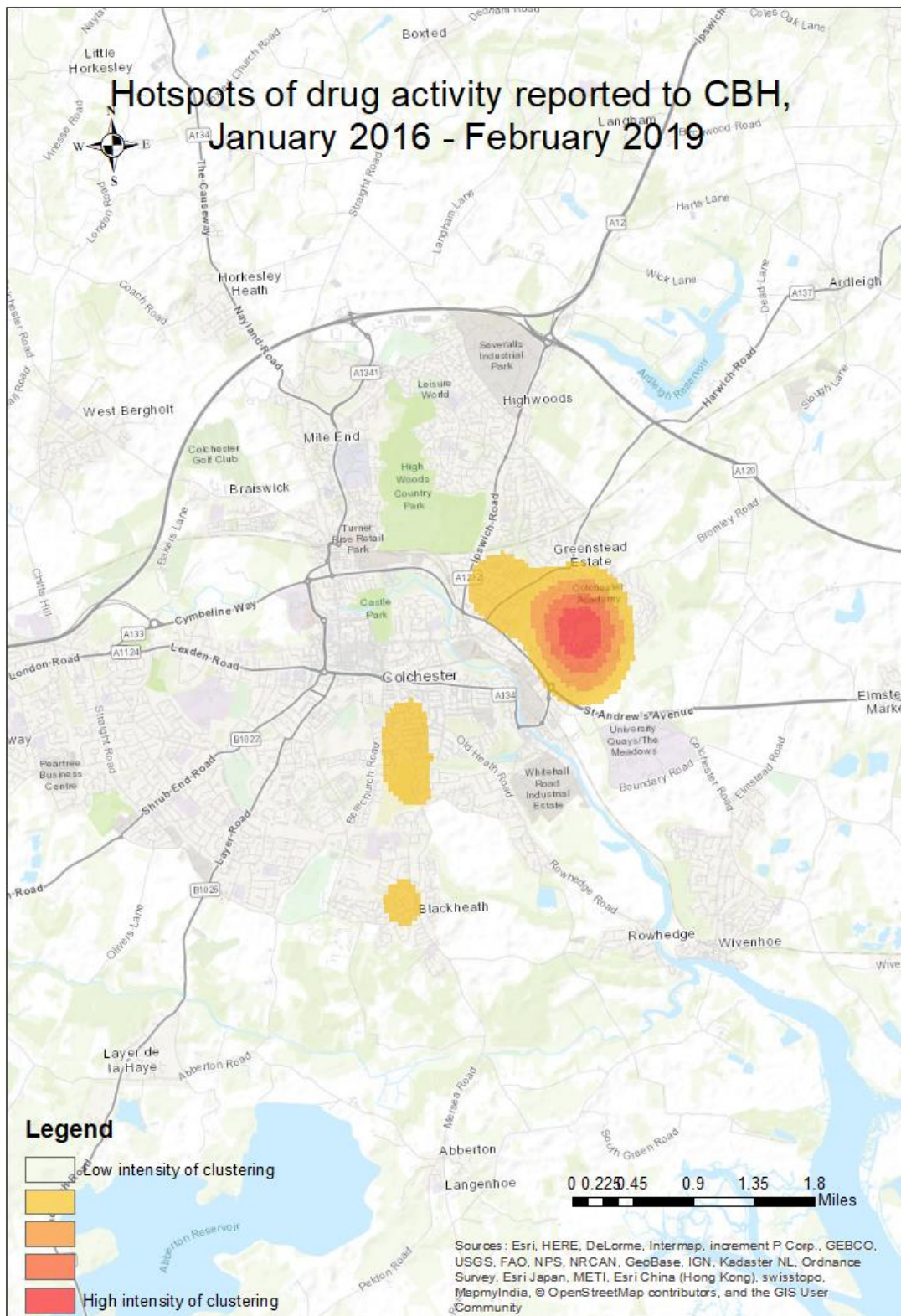


Figure 14 shows the highest concentrations of frequent disturbances are found in Greenstead, there is also a hotspot in the town centre that extends all the way down to Blackheath and a small area in Gosbecks.

Figure 14: Hotspots of CBH reported frequent disturbances. N=199

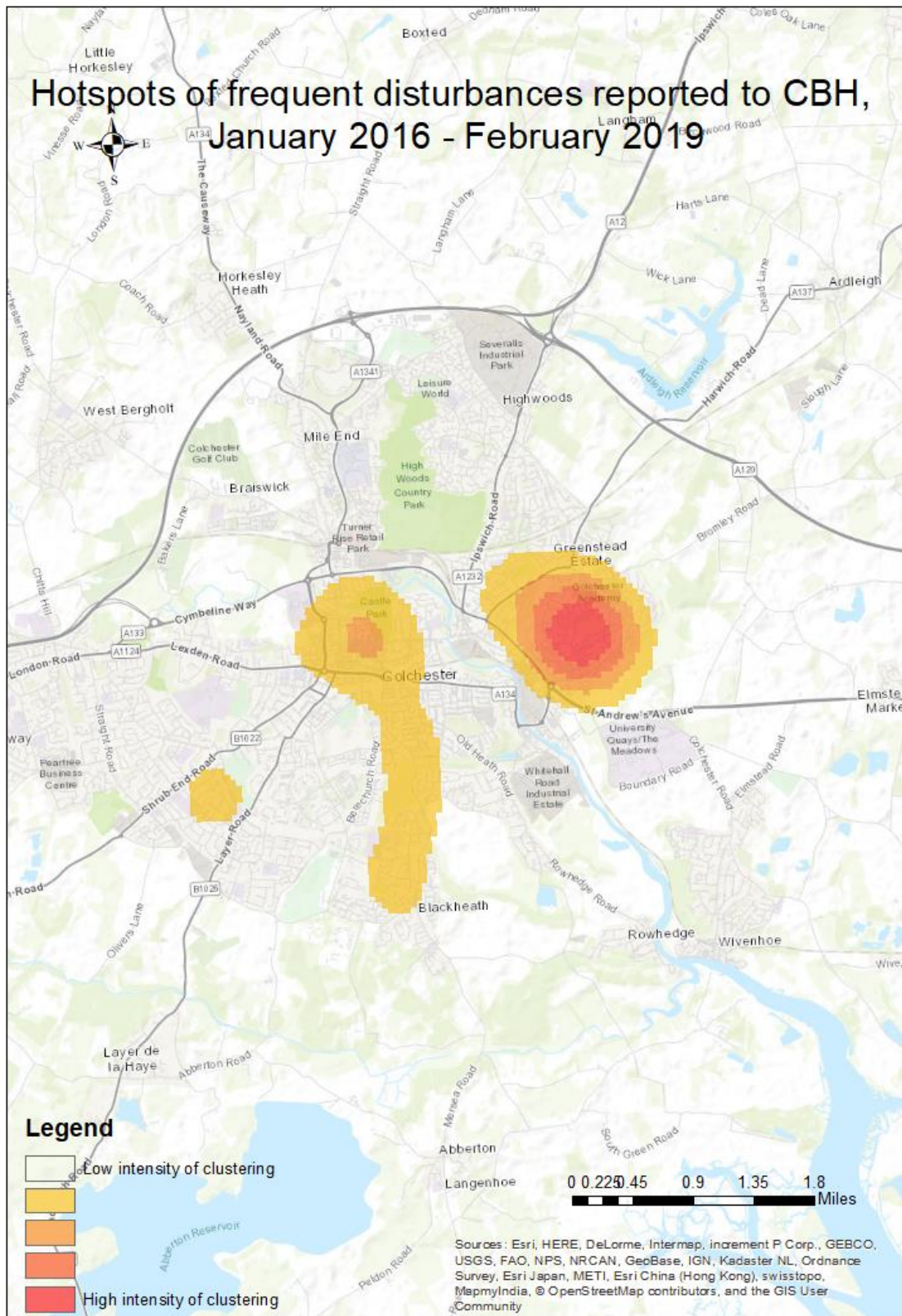
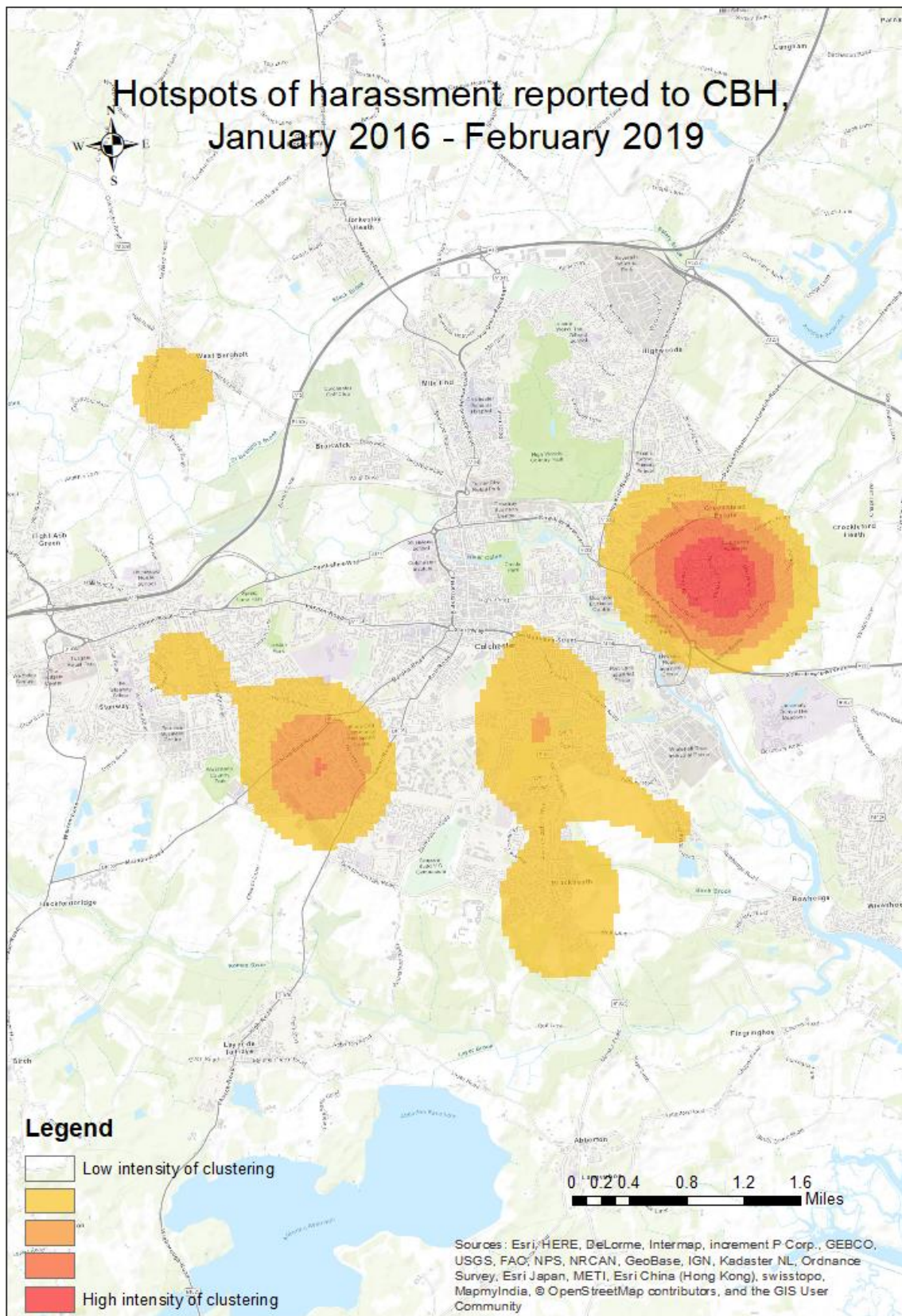


Figure 15 highlights that harassment is most concentrated in Greenstead, followed by Gosbecks and Mersea Road. There is also a small hotspot in West Bergholt.

Figure 15: Hotspots of CBH reported harassment. N=131



For threatening and abusive behaviour, Figure 16 again finds the highest concentrations in Greenstead, there are also smaller hotspots close to Castle Park, on Mersea Road and in Gosbecks.

Figure 16: Hotspots of CBH reported threatening and abusive behaviour. N=168

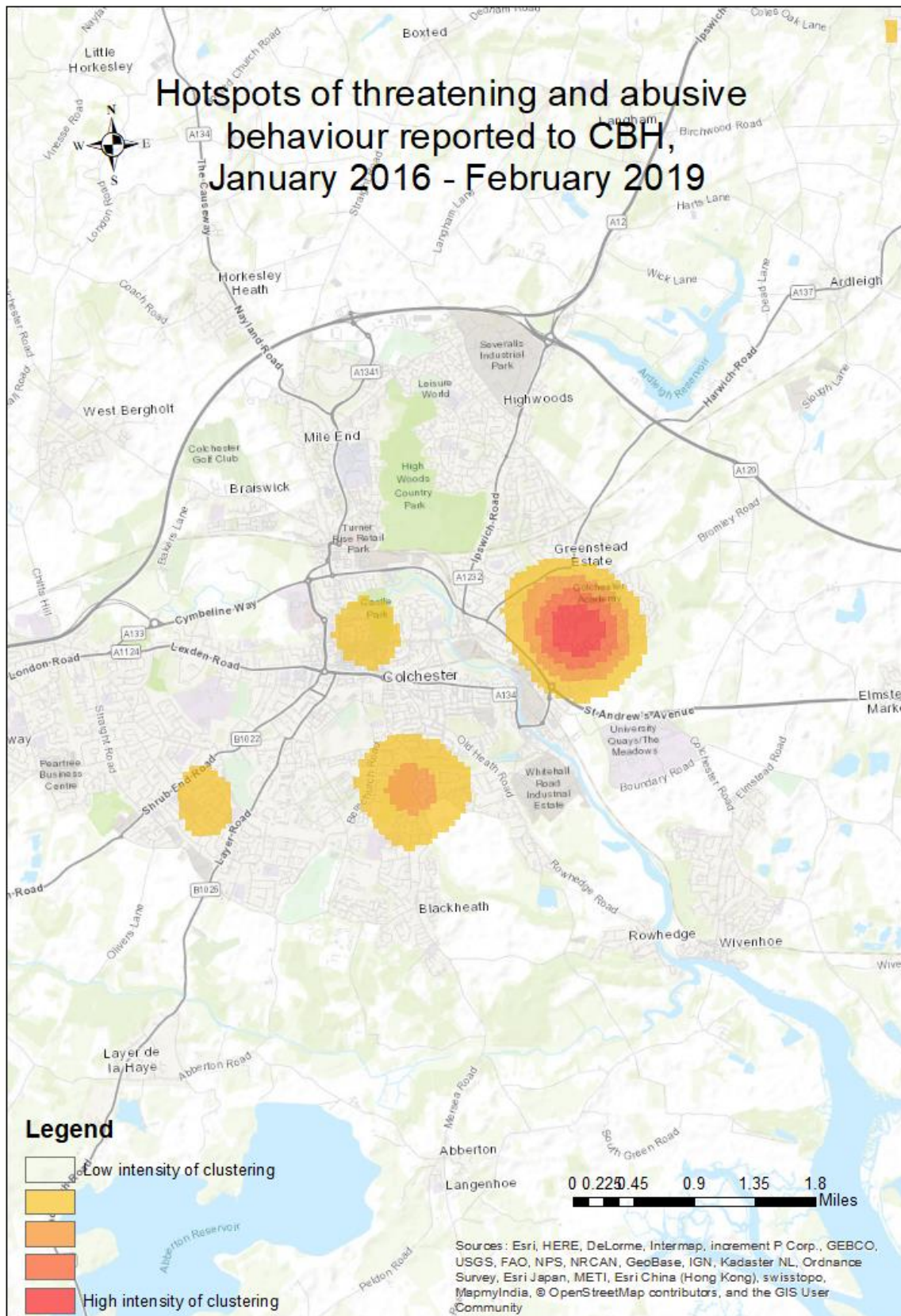
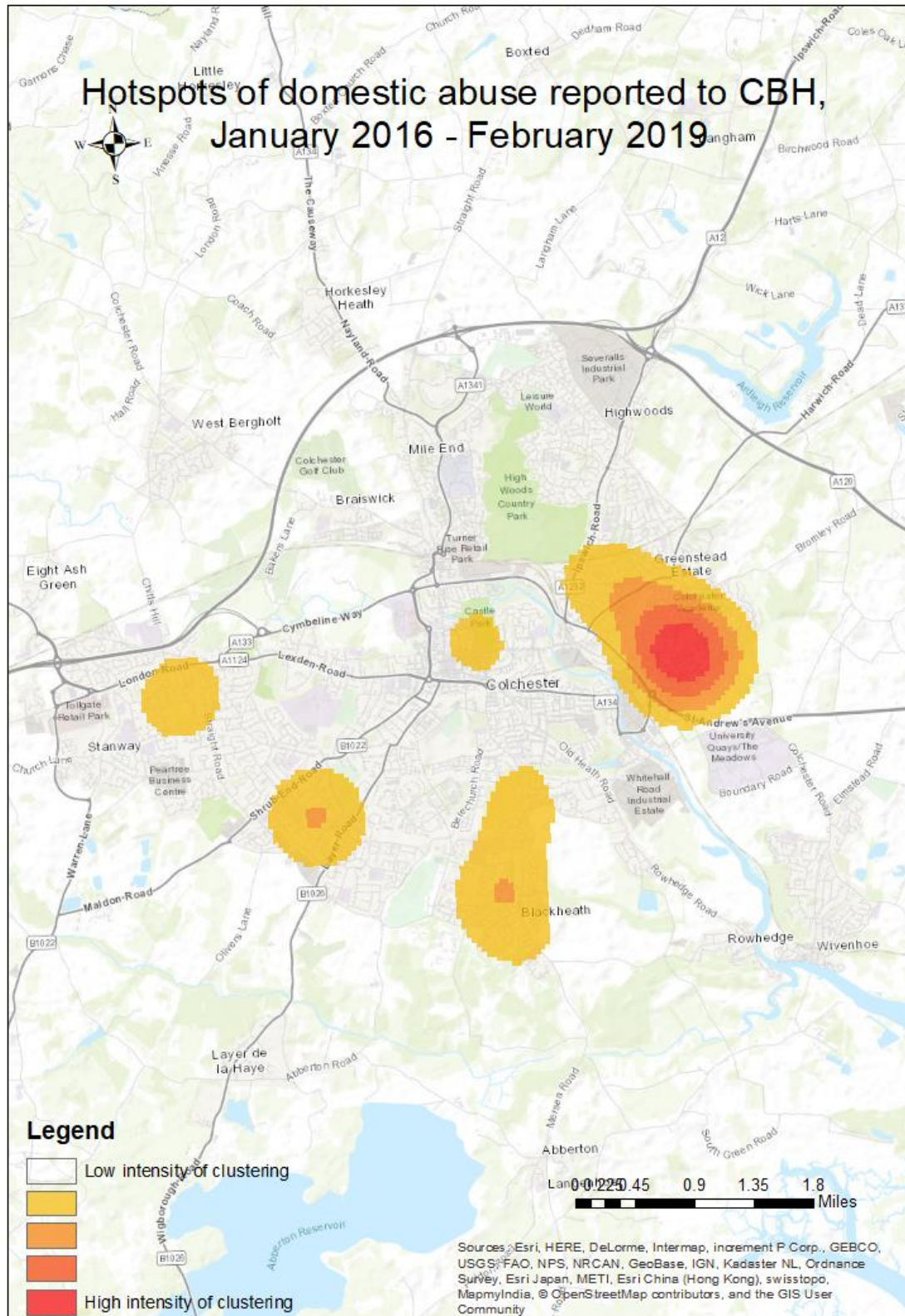


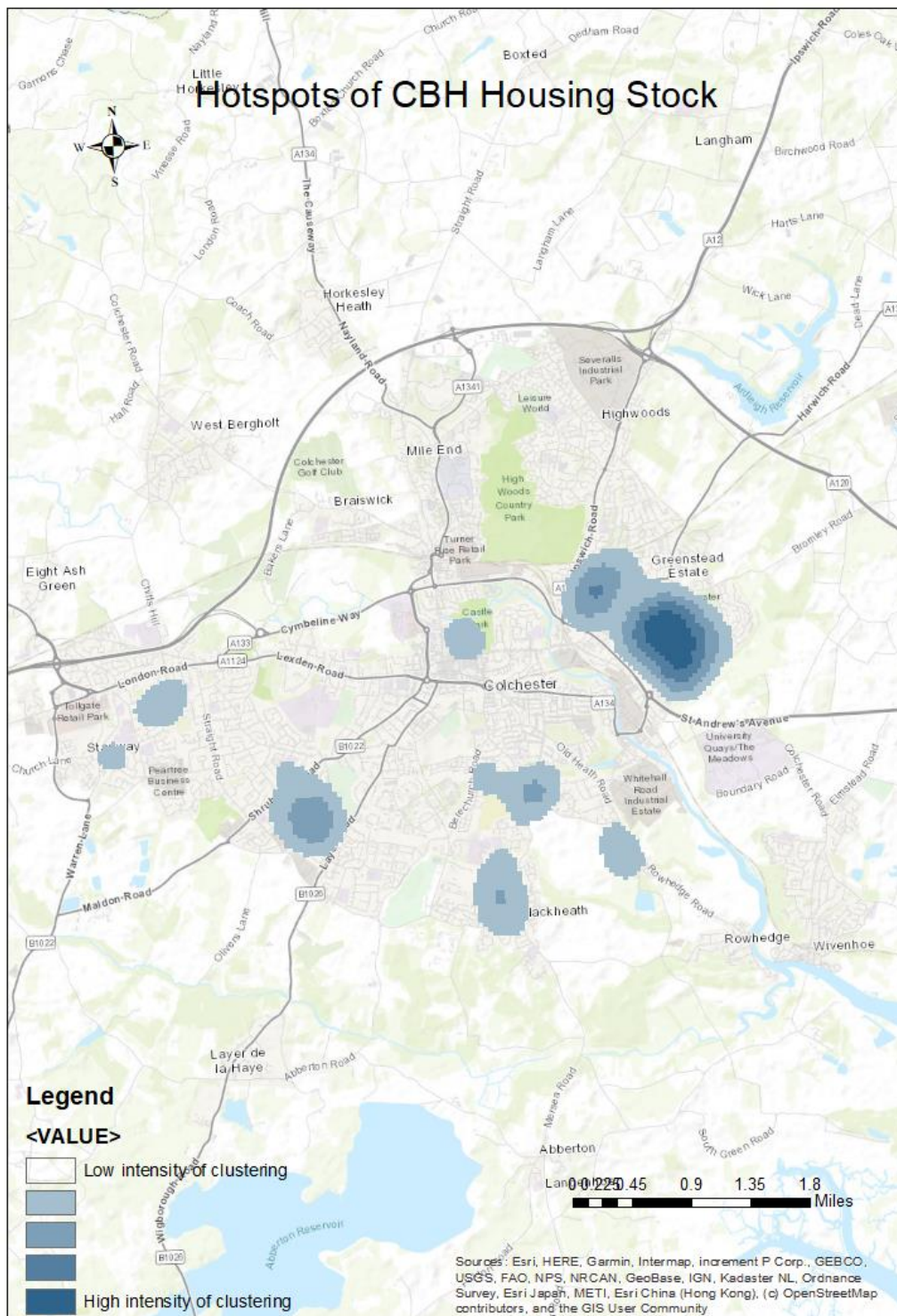
Figure 17 shows the highest concentrations of domestic abuse are also found in Greenstead, less intense hotspots are also found close to the Castle Park area, Mersea Road, Gosbecks and in Stanway.

Figure 17: Hotspots of CBH reported domestic abuse. N=156



To put the hotspot maps in context, Figure 18 examines the concentrations of CBH housing stock. It can be seen that the highest concentration of stock is found in Greenstead, which would go some way towards explaining the patterns in the ASB hotspot maps. However, it also identifies that some areas that have stock are not showing up in the ASB hotspots, such as the areas on Rowhedge Road and Stanway which do not feature as hotspots on all of the maps. The risk analysis that follows later in this report controls for housing stock in order to factor in the influence this has on levels of ASB.

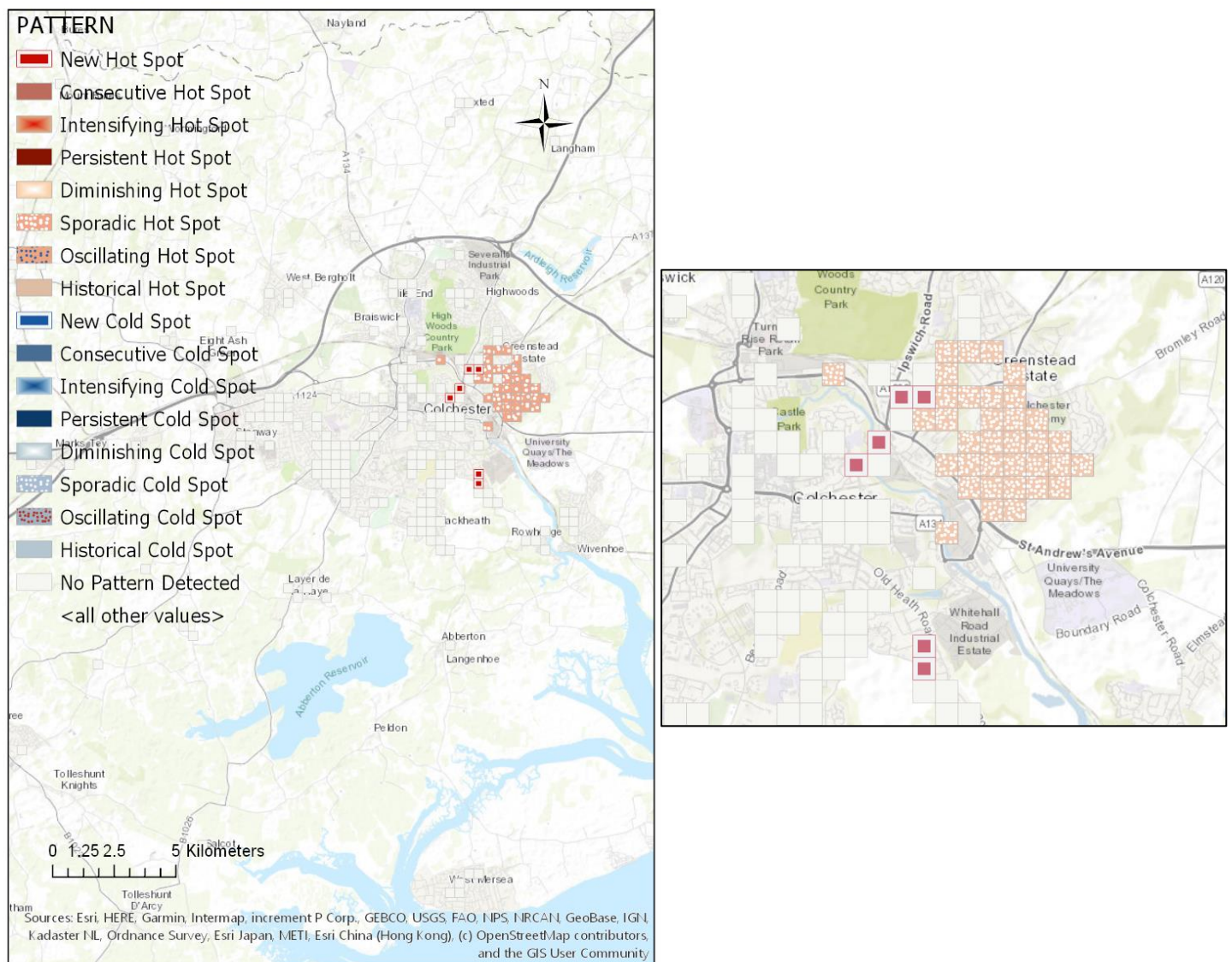
Figure 18: Hotspots of CBH housing stock. N=5918



The map in Figure 19 identifies how hotspots are emerging and diminishing in both space and time. This map shows that in February 2019 new hotspots have emerged in Monkwick and Ipswich Road (see zoomed in map for further detail). These locations have become statistically significant hotspots for the final time step and have never been a statistically significant hotspot before.

Greenstead is found to be a sporadic hotspot, which means that the location is an on-again then off-again hotspot. Less than ninety percent of the time-step intervals have been statistically significant hotspots and none of the time-step intervals have been statistically significant cold spots. If CBH were to regularly carry out this analysis they could monitor changes in the hotspots over time and deploy resources to newly emerging hotspot areas. This would also be useful in monitoring the impact of new interventions.

Figure 19: Emerging hotspots for February 2019. N=1294



5. Risk factors

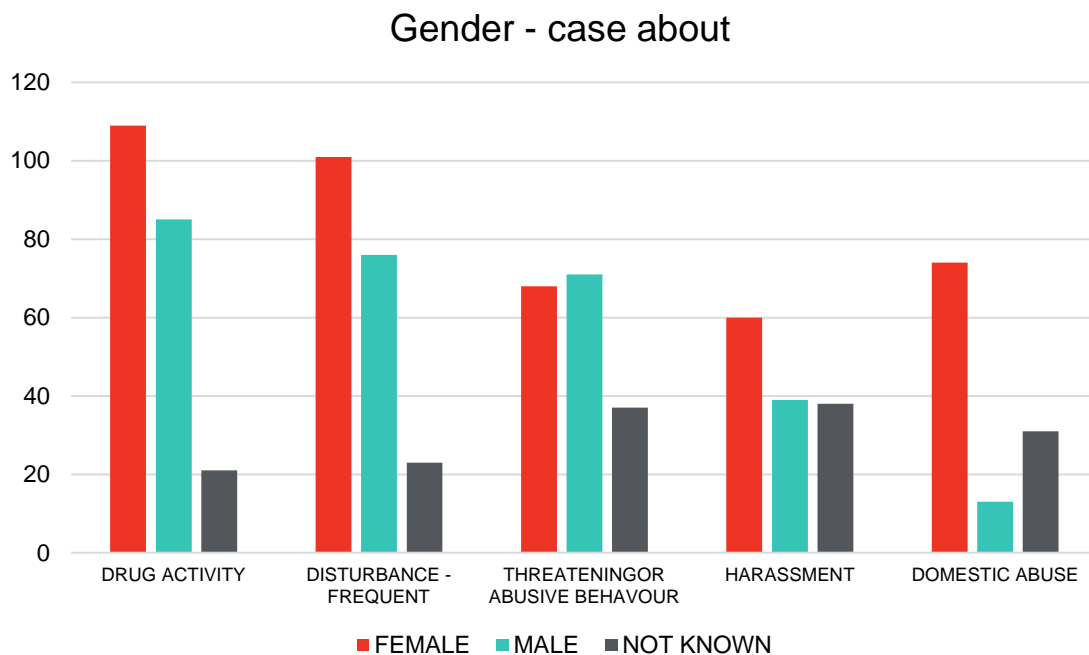
The preceding section has explored the spatial and temporal patterns of CBH and police reported ASB. This section now turns to identifying risk factors that might make a person more likely to experience ASB and report it to CBH.

5.1 Individual characteristics

5.1.1 Gender

Figure 20 shows the majority of cases are more likely to be about a female than a male, with the exception of threatening or abusive behaviours, which had slightly more cases about males. It also shows that the gender is unknown in quite a few cases, suggesting that CBH could focus on increasing the recording of this field. Domestic abuse is widely believed to be a gendered crime, and this is confirmed by the chart, with this being the category with the largest imbalance between the recorded gender information.

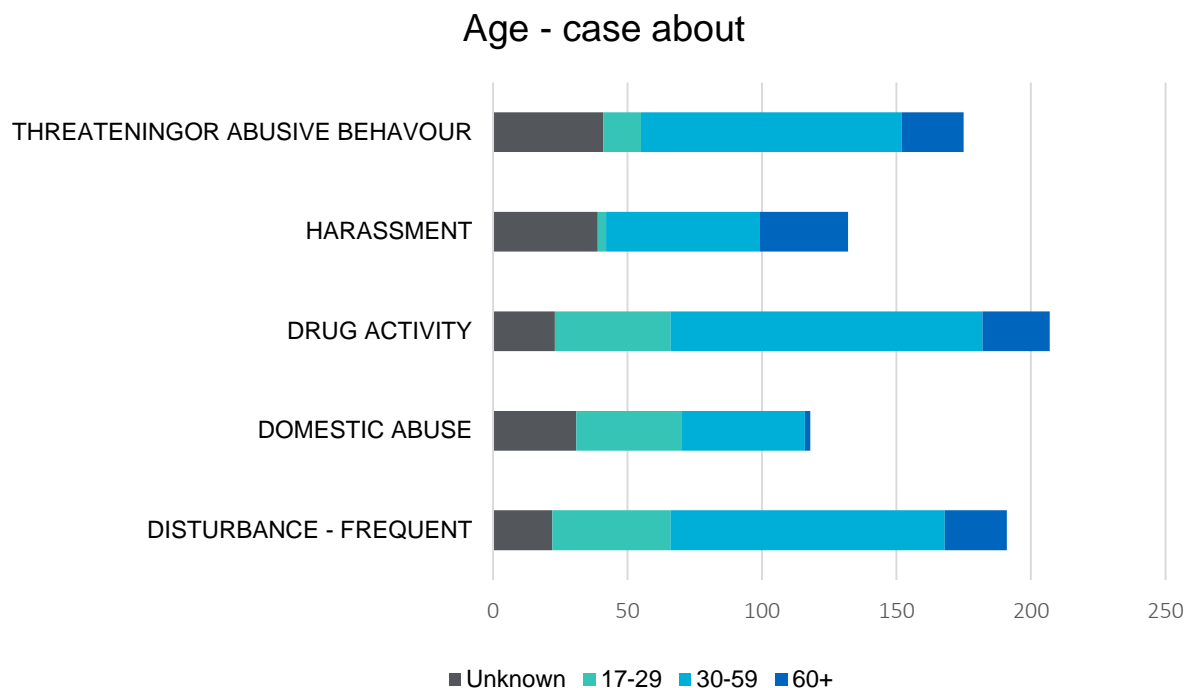
Figure 20: Gender of the person who the case was about (top 5 categories). N=888



5.1.2 Age

Like the pattern found in police reported domestic abuse data, victims of domestic abuse tend to be younger in age than in the other categories with Figure 21 showing very few persons over the age of 60 reporting abuse. Whether this is more a reflection of the propensity to report domestic abuse, which has been found to be more hidden in older victims, should be investigated further. It would also be useful to compare the profile of those reporting ASB to the profile of all CBH tenants.

Figure 21: Age of the person who the case was about (top 5 categories). N=888



5.1.3 Ethnicity

Where ethnicity was known, 91% of cases were about somebody of White British ethnicity, which is very similar to the ethnicity of the general population in Colchester. The field is, however, not as populated as other demographic information, so CBH should try to take steps to collect more ethnicity data. Past research has found that the propensity of victims to report domestic abuse could vary across ethnicities (Mooney, 2000).

5.1.4 Rent arrears

CBH collect information on whether whom ASB is reported about is experiencing rent arrears. Unsurprisingly, Figure 22 shows that the category with highest percentage of rent arrears was abandoned properties, with 55% of these cases showing arrears. This is followed by cases which have requested support for alcohol or drugs.

Figure 22: Percentage of cases with rent arrears. N= 1,311

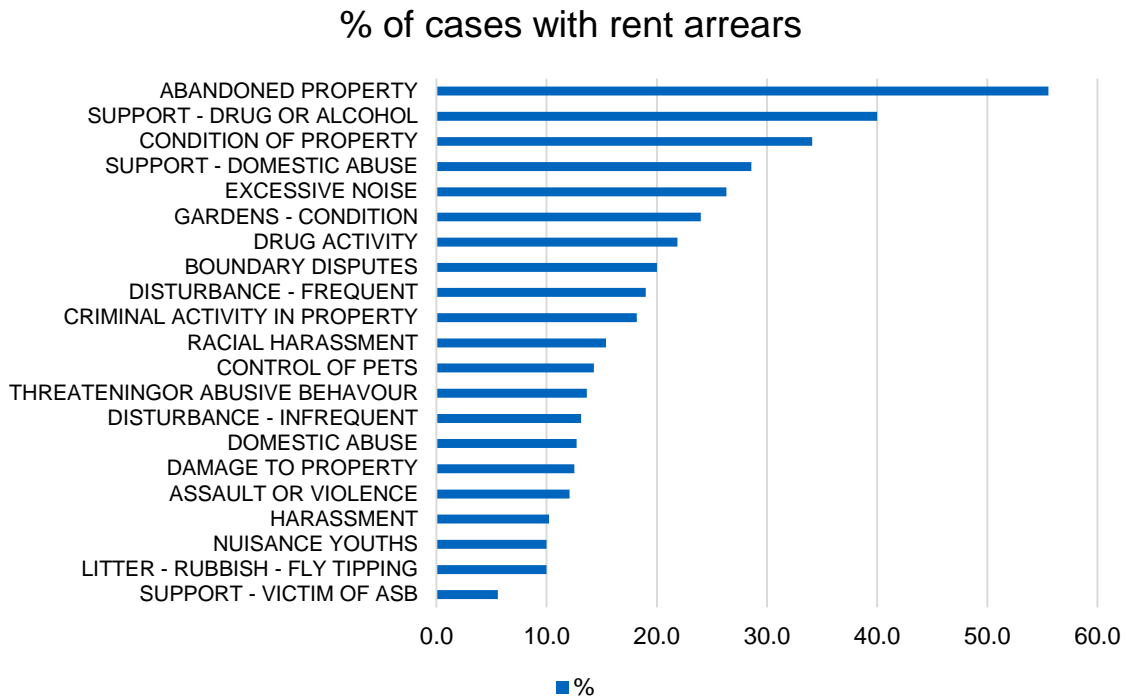
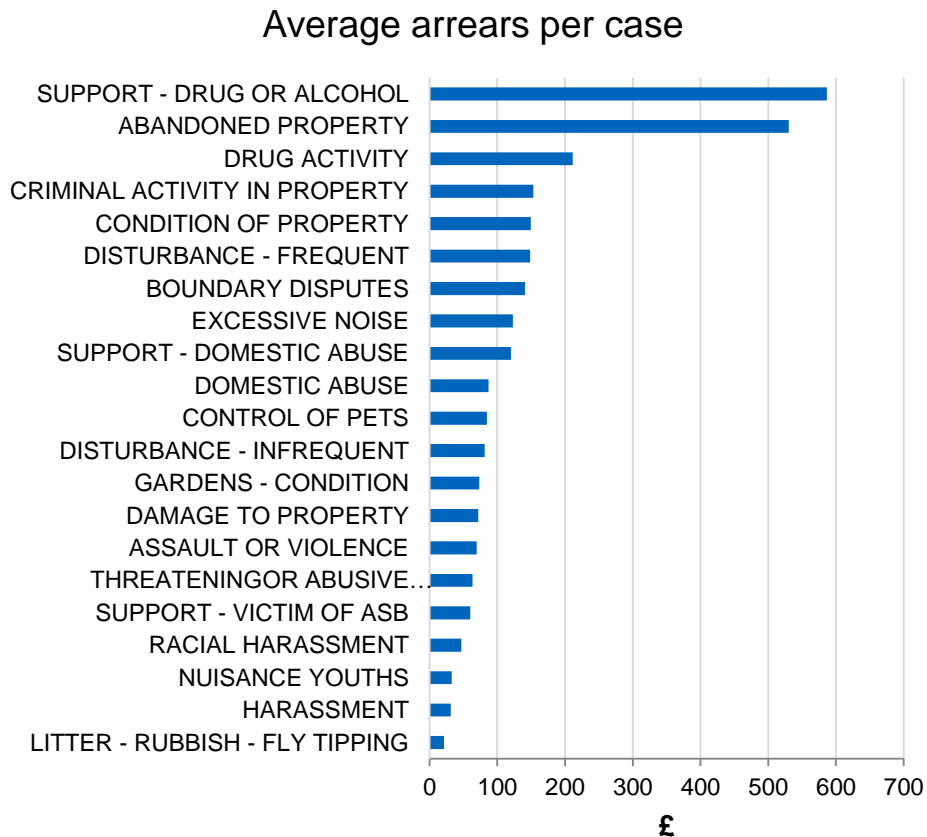


Figure 23 shows that the support for drugs or alcohol cases had the highest amount of arrears owing, followed by abandoned properties. Both categories have on average between £500 and £600 arrears per property. Domestic abuse cases had about £100 in arrears on average.

Figure 23: Average arrears per case. N= 1,311



5.2 Neighbourhood characteristics

This section explores whether there are risk factors at the neighbourhood level that make people in particular areas more likely to experience ASB and report it to CBH. Other research (Weir, 2019) has found that domestic abuse can be predicted at the neighbourhood level using four predictors: income from the Indices of Multiple Deprivation (IMD), population density, police reported ASB, and the proportion of BAME population. With the CBH data a number of variables were modelled, including the percentage of young people, police reported ASB and population density, to see whether there are any neighbourhood level predictors of CBH reported ASB. To control for different levels of housing stock across Colchester, the concentration of stock was also included in the model.

The model with the best fit found that the IMD score in the neighbourhood was the best predictor of the amount of ASB that was reported to CBH. Table 2 shows that for a one unit increase in the IMD score the amount of ASB increases by a log count of 0.04. Generally, this means that areas that are more deprived will have more ASB (taking into account the variations in housing stock). None of the other variables that were explored were significant or improved the model fit, but in the future other data could be modelled, including the community asset mapping data that is currently being collected in the field.

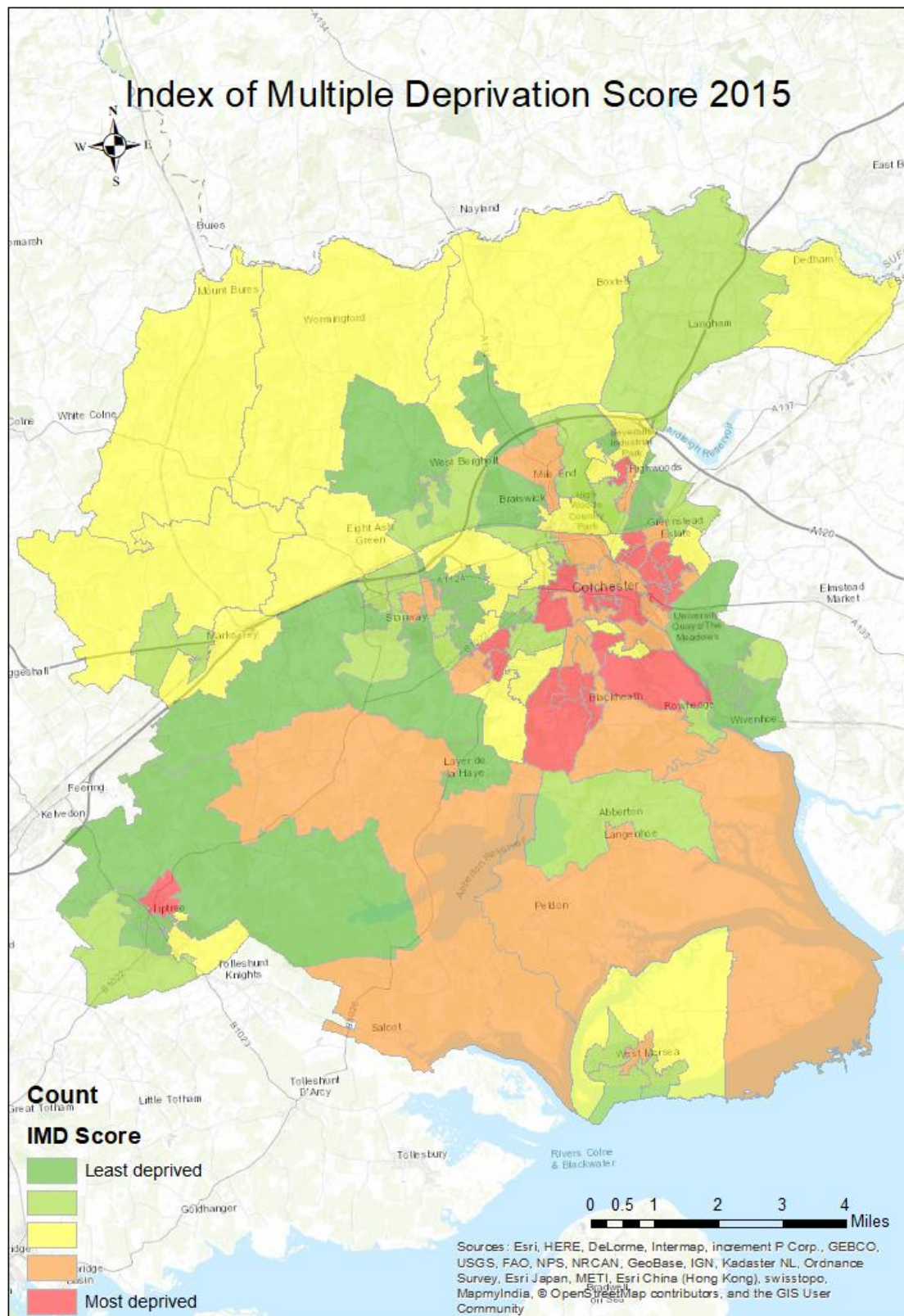
Table 2: Negative binomial regression model

Dependent variable ASB count		
Independent variables	Coefficient	Standard Error
IMD Score	0.40*	0.10
Total stock	0.003*	0.0012
Constant	2.35*	0.158

N= 105 observations (at LSOA level). Log likelihood: -441.8 *p=0.05

The map of the IMD score in Figure 24, shows that the areas that are most deprived include Greenstead and Monkwick, which were found to be hotspots for all types of ASB.

Figure 24: Index of Multiple Deprivation Score, 2015



6. Findings and recommendations

6.1 Key findings

Overall, the analysis has highlighted that there are two main areas of Colchester that have disproportionately more ASB than other areas. The main area is Greenstead and the other smaller area is Monkwick. These are areas that CBH suspected anecdotally to be areas with the greatest need and this analysis has provided the evidence to back this up. It has also identified the variation in spatial patterns, between the different categories, which should enable CBH to target their activity. The risk analysis has found that deprivation is the greatest known predictor of CBH reported ASB, but further work could be done to identify other predictors, particularly drawing on the recent community asset mapping data that is being collected by CBH officers. This would help to identify whether support is being offered by other community services and groups and whether this works better in certain communities.

Victims of ASB are generally more likely to be female and under the age of 60, but more work needs to be done to explore whether this is representative of those residing in CBH stock, or whether the propensity to report varies according to factors such as age and ethnicity. It must also be noted that victims could be reporting to other agencies, which further emphasises the need for a multi-agency approach to tackling both ASB and domestic abuse. The analysis has shown how different the patterns of reported ASB are when comparing those reported to the police and those reported to CBH. It would be interesting to overlay the police reported domestic abuse with the CBH reported data.

This analysis has deliberately looked at all ASB that has been reported to CBH. The ongoing work that CBH are doing now on recognising the early signs of domestic abuse should help to identify whether domestic abuse is hidden in some of the other categories of ASB, such as noise nuisance.

6.2 Recommendations

This analysis recognises that this is the first time that CBH has formally undertaken analysis of its ASB data. In undertaking the analysis, I have noted several steps that CBH could take to improve the quality of information collected, which will enable the service to replicate and broaden future analysis. The main recommendations are to:

- Record the date and time when the incident took place rather than when it was recorded.
- Improve the recording of age, gender and ethnicity so that further analysis could consider risk factors at the individual level.
- Undertake regular (monthly) emerging hotspot analysis to see if there have been any changes in where the hotspots are located. This could be done in ArcGIS Pro.
- Undertake further repeat victimisation analysis. This would be easier if a repeat flag was included in the database. The police define a repeat as one where another incident has been reported in the same year.
- Request police reported ASB data from Essex Police. This will allow more temporal analysis and give the exact location.
- Request police reported domestic abuse data from Essex Police. This will allow comparison to be made and highlight those reporting to both agencies. The data could also give more insight into the level of risk that the police have recorded.
- Consider collecting DASH risk assessment data (like Peabody do), to enable risk to be considered.
- When collecting cause for concern data for domestic abuse, identify whether this individual has any cases reported against them or by them. This will enable analysis to be conducted to see whether other categories of ASB could be an early indicator of domestic abuse.
- Carry out further evaluation when the Community Plan is fully functional and closely monitor and record initiatives that are introduced as a result of this analysis. This will enable the impact of such measures to be robustly evaluated.

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The Catalyst Project is led by the University of Essex and received £2.2 million funding from the Higher Education Funding Council for England (HEFCE) and is now monitored by the Office for Students (OfS).

The project uses this funding across the following initiatives:



Evaluation

Empowering public services to evaluate the impact of their work



Risk Stratification

Using predictive analytics to anticipate those at risk and to better target resources



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