West Sussex County Council

ASH DIEBACK DISEASE SURVEY

Highways Phase 2: Photograph Review

70055498-AR2
FEBRUARY 2020

PUBLIC

West Sussex County Council

ASH DIEBACK DISEASE SURVEY

Highways Phase 2: Photograph Review

TYPE OF DOCUMENT (VERSION) PUBLIC

PROJECT NO. 70055498-AR1

OUR REF. NO. 70055498-AR2

DATE: FEBRUARY 2020

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QUALITY CONTROL

Issue/revision	First issue	Revision 1	Revision 2	Revision 3
Date	11-02-20			
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Project number	70055498-AR1			
Report number	1.0			

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1

INTRODUCTION

1 INTRODUCTION

1.1 PURPOSE

1.1.1. The purpose of this document is to provide context and a record of the actions taken by WSP on behalf of West Sussex County Council (WSCC) in relation to Ash Dieback disease (ADB) present on the A and B road network under the care of WSCC.

1.1.2. This report follows on from the Phase one report (Ref 70055498-AR1) and relates to the review of photographs captured during the drive through survey.

1.1.3. The brief was to carry out an image by image review of the circa 11,500 photographs and allocate a rating according to leaf cover present. These attributes were to be added into the existing GIS data set to be transferred to WSCC and used in their GIS systems accordingly.

1.1.4. As with the previous phase, the photographic review undertaken and this report do not constitute a tree hazard assessment and it should not be used as such. Its intent is to inform decision making around resource and programming of works required to negate the potential threat posed by Ash trees that may have succumbed to Ash Dieback Disease (ADB).

1.1.1. With the above point in mind, it is worth re-affirming that the initial survey methodology and subsequent photographic review does not identify which of the trees recorded were infected with ADB; both elements of the work identify which of the Ash trees recorded have sub optimal leaf cover in their canopies. Sub optimal leaf cover can be attributed to many biotic and abiotic factors of which ADB is only one.

1.2 CONTEXT

1.2.1. The following points are intended as an aide memoire and to set the context for the rest of the document;

- Where sighted from the survey vehicle, Ash trees were photographed using GPS enabled GoPro cameras.
- The photographs were uploaded daily and stored centrally
- Where the Bluetooth trigger had caused the camera to capture 30 pictures in a “burst” (rapid succession) an algorithm was used to reasonably eliminate unwanted duplication while retaining pertinent photos
- Video footage was also taken and stored centrally to aid the photographic condition record of the Ash trees at the time of survey.
- Due to the survey methodology and speed it was not possible to allocate a leaf cover rating at the time of survey, this needed to be done post survey hence the requirement for phase 2.

1.3 BEST PRACTICE

1.3.1. As this is a new method of survey there are no published best practices to observe.

1.3.2. However, all reasonable efforts have been made to consider the users experience of the data, its robustness when used to inform tree management decisions and its accuracy.

1.3.3. With the above point in mind, and following consultation with WSCC, staff used on the initial survey, staff with Arboriculture experience and staff within the Arboriculture & Forestry team at WSP were used to carry out the photograph review.

2 METHODOLOGY AND QUALITY ASSURANCE

2.1.1. The following methodology was applied to the photograph review;

- All photographs were hyperlinked to the GIS data set collected in phase one.
- To avoid replication or cross editing the data set was split into four sections with reviewers working on one road within one section at a time.
- Each photo was opened individually and compared against the guidance provided by the Tree Council
- The reviewer allocated a leaf cover category, accordingly, marked the point as reviewed before closing the item
- All attributes are automatically saved at a central location when the point is closed.
- As each point was categorised it changed colour from grey (not reviewed) to an appropriate colour for its leaf cover.
- Where the core team were unable to confirm a leaf cover rating, the photograph was flagged and Neil Davies (Associate Director – Arboriculture & Forestry) made an appropriate decision based on his drive through QA carried out and 23 years of experience in tree and woodland management. This provided an element of QA during the ongoing work.

2.1.2. During the review process it became clear that light and weather conditions impacted the quality of the raw photograph and the reviewers' ability to assign a leaf cover rating. This was corrected in large part by using settings in photo editing software to allow a more robust decision to be made.

2.1.3. Neil Davies undertook a 3% sample of data points selected at random across the entire data set. Each photo was opened and its canopy compared against the category awarded for accuracy.

2.1.4. If it was felt that the point should be awarded a different leaf cover category, the other trees in the immediate area were also reviewed prior to editing. This enabled a reasonable comparison to be made of the trees in the area taking into account genetic diversity, local conditions and previous works for example.

2.1.5. Where photos had been taken by mistake, while inserting the camera into its cradle for example, they were deleted.

2.1.6. Where recorded points were within areas of high Ash populations or were in section that formed adjoining canopies over the road (Tree Tunnels) an average leaf cover for the ash canopies evident in the image was provided.

3 RESULTS DISCUSSION AND RECOMMENDATIONS

3.1 RESULTS

3.1.1. Key points of note are listed below

- Within the study area, approximately 11,500 ash trees recorded (adjacent to A and B roads). Following photograph review as detailed above approximately 500 records have been discounted and deleted from the GIS data set. Originals are of course still held on file.
- Of the trees recorded 54% were found to have100-75% leaf cover
- 28.5% were found to have 75 -50% leaf cover
- 12.5% were found to have 50-25% leaf cover
- 5% were found to have 25-0% leaf cover
- Younger populations of trees are more prone to ADB and as such some routes appear to have high densities of problem trees where younger trees are more common
- Transit routes through the county that are assumed to have high traffic flow show higher levels of less leaf cover, this is in keeping with trends observed elsewhere in the UK.
- It has not been possible to separate WSCC from third party trees conclusively at this stage. Therefore, the amount of effort potentially required to manage letters and notices to have third party trees managed is unknown.
- The data set is of course the main deliverable within this commission, Josh Aves has been liaising with the WSCC IT team to organise transfer of the data to an appropriate location within the WSCC IT system.

3.2 DISCUSSION

The 100 – 75% category represents over half of the tree population recorded. This may be misleading in some respects as the category includes trees that have leaf cover within expected tolerances based on time of year, location, weather conditions, drought in previous year, but also includes trees that have lost 25% of their leaf cover. It is felt that introducing a fifth category of 100% to 85% to capture normal trees is unlikely to alter the way this group of trees is treated in the short term as the 100%-75% category trees are the lowest priority for remedial works at this time.

The 50-25% and 25-0% leaf cover categories make up just 17.5% of recorded trees, this is a testament to WSCC's ongoing management of potentially dangerous trees in their area. It may also indicate that the disease is still becoming established in the area and the population numbers in these categories is likely to rise in the coming years. With this point in mind it may be expedient to forecast an increase in the amount of resources needed to manage ADB within the A and B roads highways estate.

It will be interesting to monitor the 50-75% category population to ascertain what proportion succumb to disease, what proportion stagnate and what proportion improve. Identifying trends in this category in particular will be of great use in forecasting the development of the disease and decline of the Ash tree population in WSCC.
With the above points in mind it is worth noting the following anticipated trends within two growing seasons based on general principles of tree physiology and reaction to decline in physiological condition.

- Trees in the lower range of 100 – 75% leaf cover category may improve. It is not possible to predict what will happen to trees at the upper end of this range.
- Trees in the 75 – 50% category are unlikely to improve significantly.
- Trees in the 50 – 25% category are unlikely to not improve and may be lost as a result.
- Trees in the 25 – 0% category will not improve.

There will of course be exceptions to the above depending on the reason for the initial loss of leaf cover and the individual trees ability to withstand pest and disease.

Given the scale of the estate and the range of Ash tree population types (urban, rural, woodland, groups, individual) it is felt that this methodology for baselining the condition of Ash trees is reasonable and proportionate. It provides a robust starting point on which to prioritise remedial works and follow on survey efforts to manage the potential threat posed by ADB to the safe us if the A and B road network.

3.3 RECOMMENDATIONS

3.3.1. The data set provided should be used to prioritise walk over survey effort / detailed inspection of Ash trees within the 25 – 0% category as a priority, this should then be extended to the 50 – 25%.

3.3.2. Notwithstanding the programming and delivery of remedial works, the walk over survey will allow a better understanding of the reason for leaf loss (ADB or another factor), the ownership of the trees and a larger scale site based feedback on the data gathered to date.

3.3.3. It is recommended that early contact is made with Natural England and other consultees as to the potential impact to protected species as the requirement for licencing before all but emergency works are carried out is likely to consume resources and potentially delay some elements of remedial work.

3.3.4. It is understood that Natural Resources Wales are yet to publish a letter of understanding / position statement in relation to ADB and protected species. Clients managing the trunk roads in Wales have been required to prepare and submit licence applications for non-emergency / non-high priority remedial works. It is felt that the position with Natural England is likely to be similar.

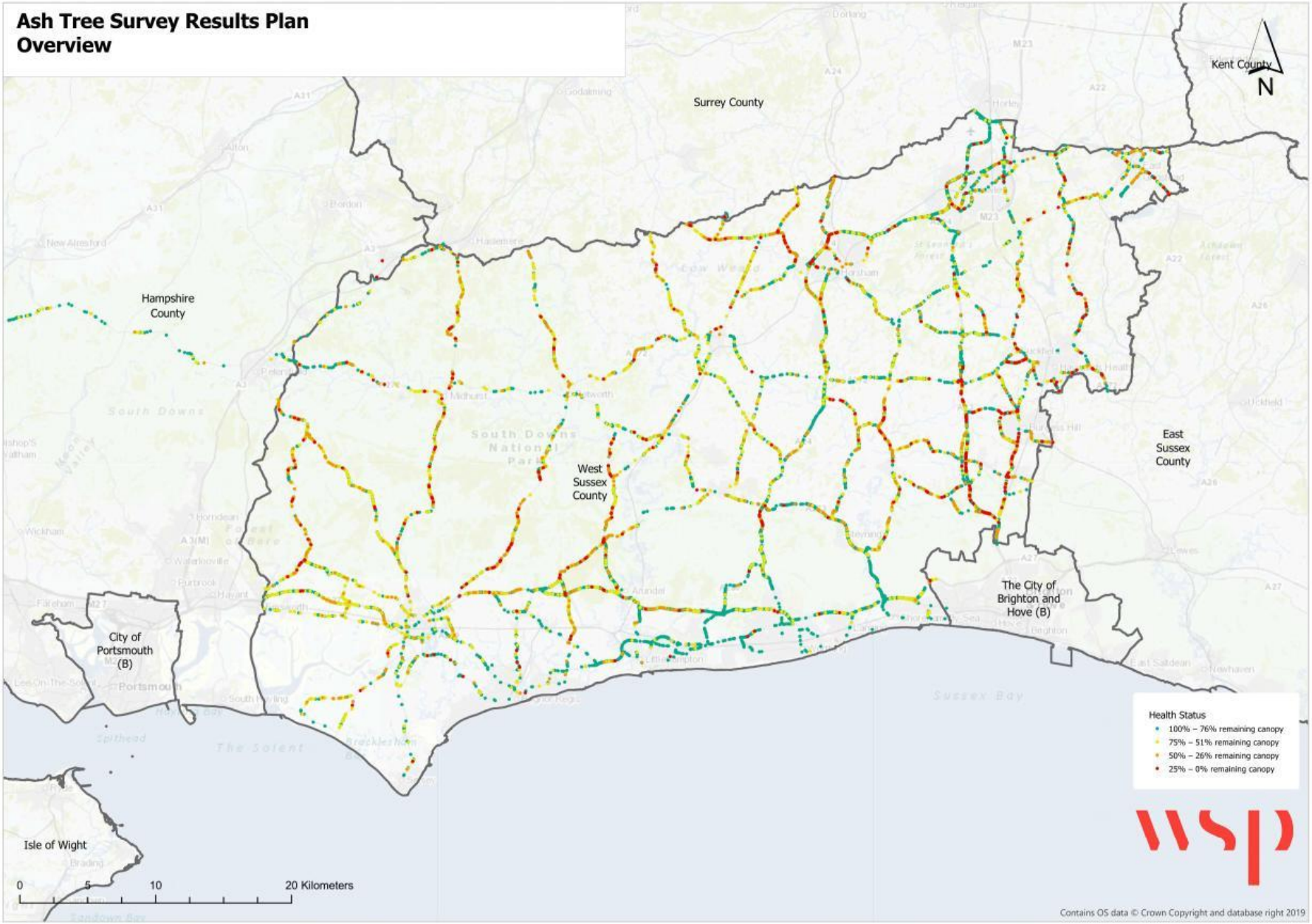
3.3.5. To ensure compliance with duty of care and the recommendations set out by the Tree Council, the survey methodology should be extended to other classes of road under WSCC care.

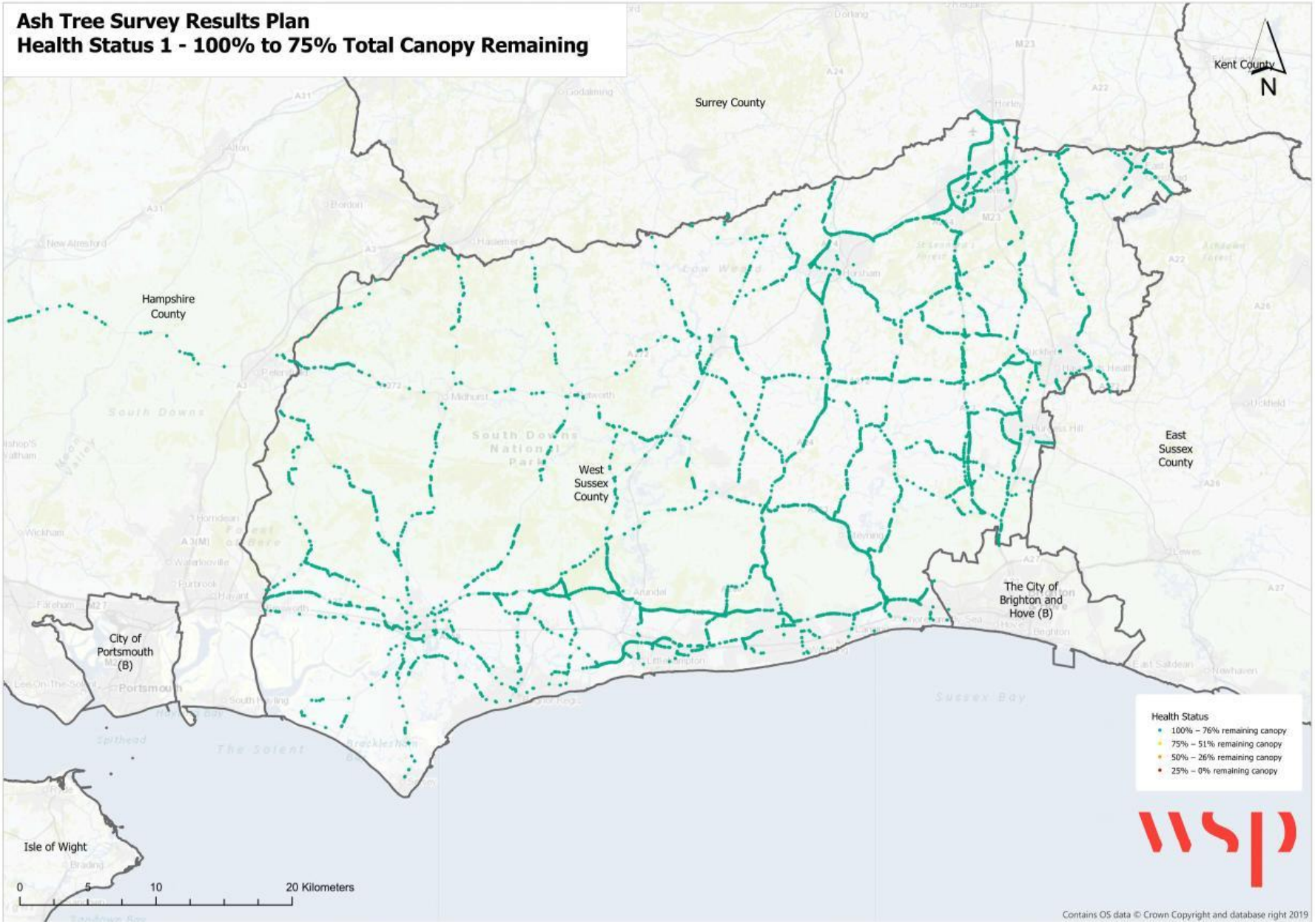
3.3.6. Given the efforts required to award leaf cover category post survey, adjustments to the drive by survey method should be explored. These should focus on efficient collection of leaf cover categories while also gathering GPS location and photographic record.

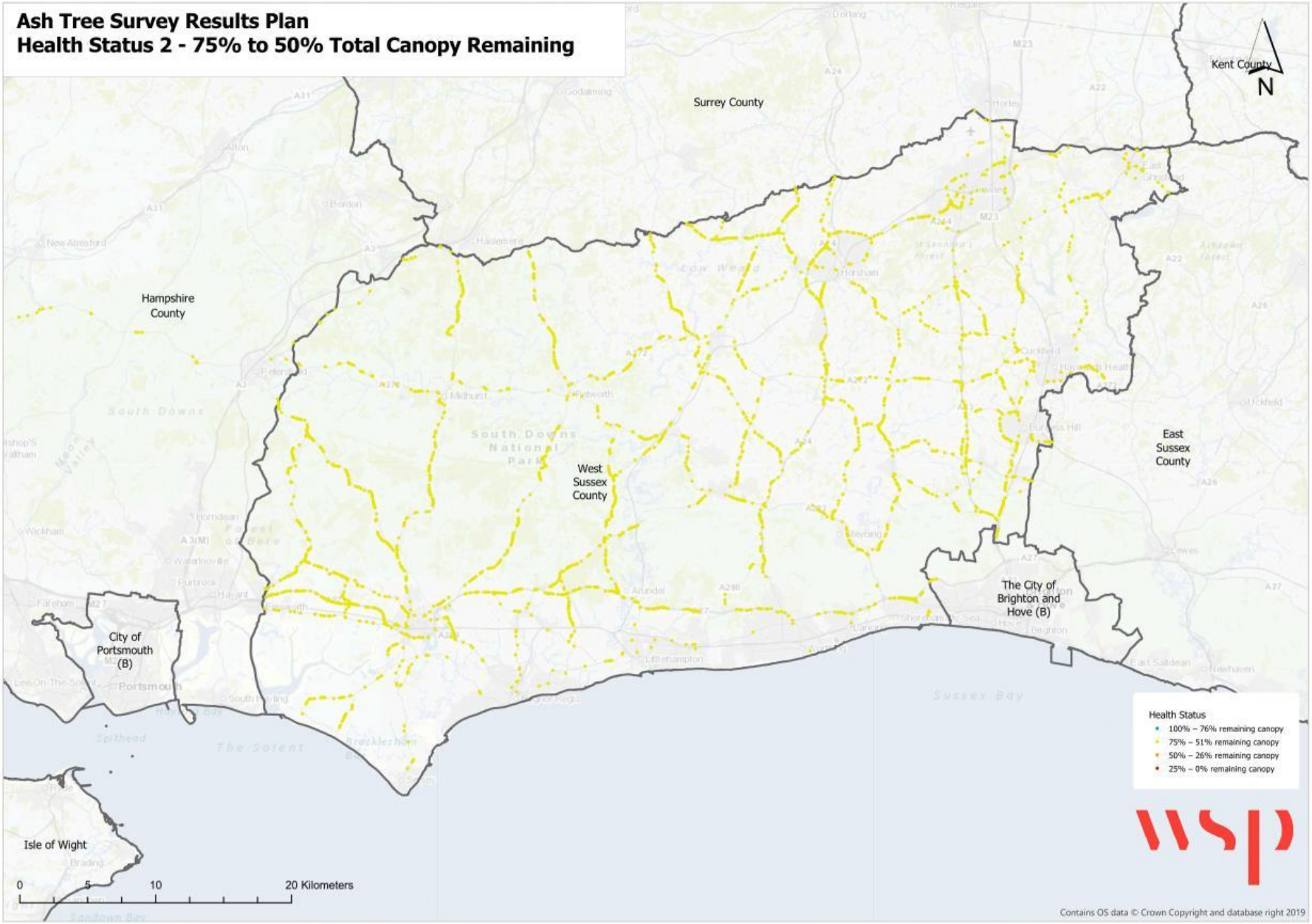
3.3.7. Continued photographic and video record of the A and B road network will be of great use to understand the advancement of the disease where found in the coming years but a baseline needs to be established.

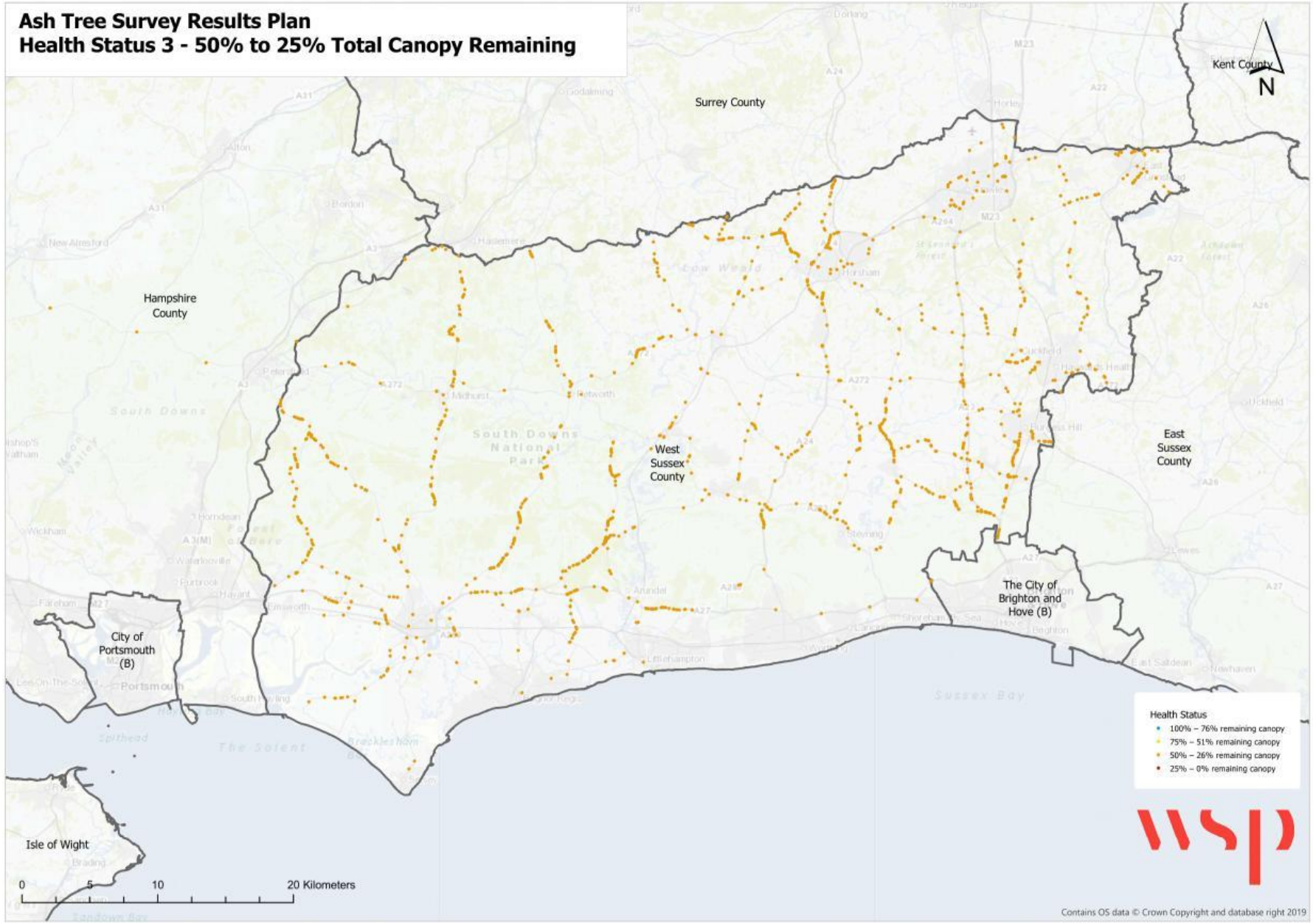
Appendix A

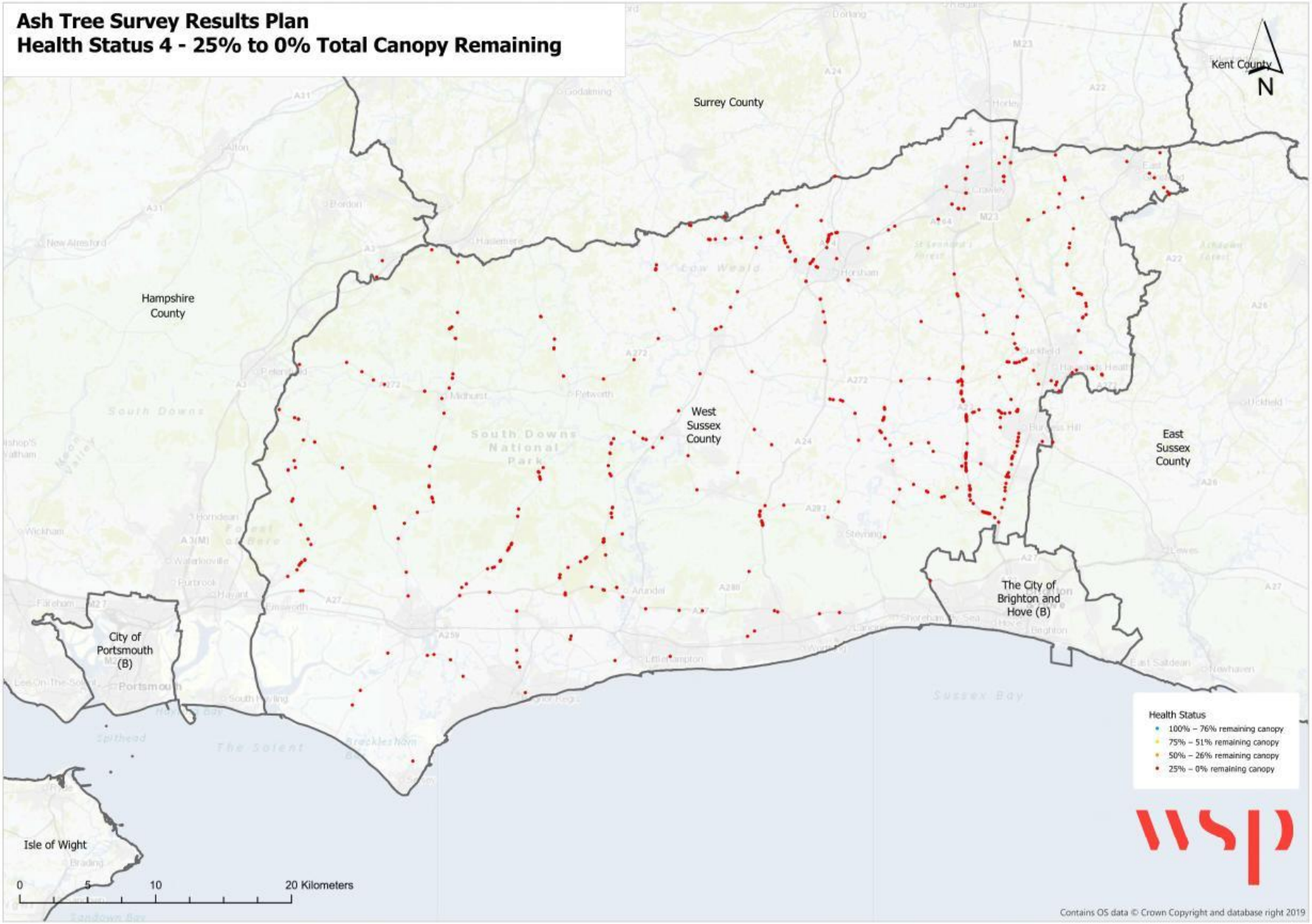
RESULTS MAPS

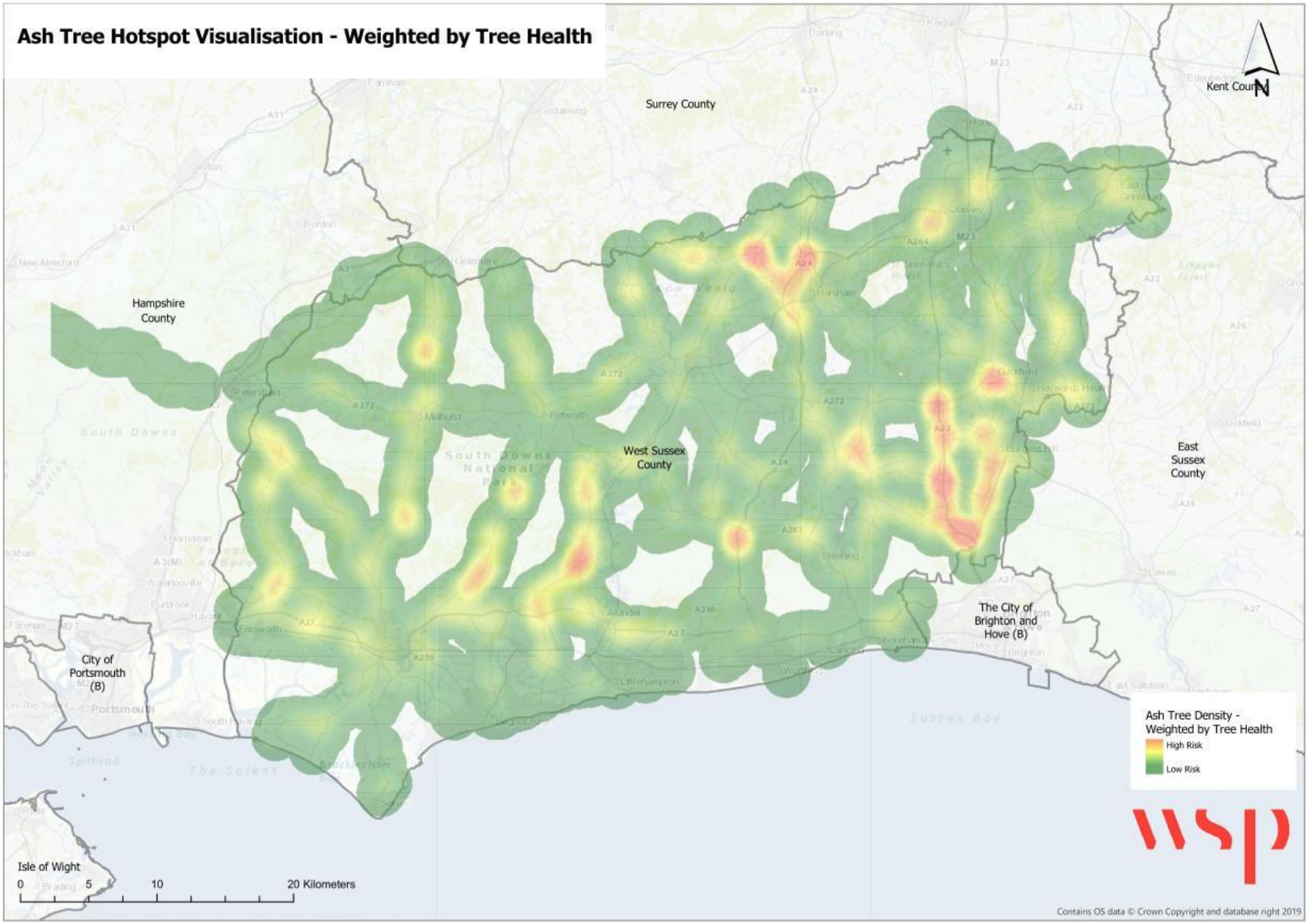

Ash Tree Survey Results Plan
Overview
Surrey County
Kent County
N
Hampshire
County
West
Sussex
County
East
Sussex
County
The City of
Brighton and
Hove (B)
City of
Portsmouth
(B)
Isle of Wight
0
5
10
20 Kilometers
Health Status
100% – 76% remaining canopy
75% – 51% remaining canopy
50% – 26% remaining canopy
25% – 0% remaining canopy
Contains OS data © Crown Copyright and database right 2019


Ash Tree Survey Results Plan
Health Status 1 - 100% to 75% Total Canopy Remaining
Surrey County
Kent County
N
Hampshire County
West Sussex County
East Sussex County
The City of Brighton and Hove (B)
City of Portsmouth (B)
Isle of Wight
0
5
10
20 Kilometers
Health Status
100% – 76% remaining canopy
75% – 51% remaining canopy
50% – 26% remaining canopy
25% – 0% remaining canopy
Contains OS data © Crown Copyright and database right 2019


Ash Tree Survey Results Plan
Health Status 2 - 75% to 50% Total Canopy Remaining
Kent County
N
Surrey County
Hampshire County
West Sussex County
East Sussex County
The City of Brighton and Hove (B)
City of Portsmouth (B)
Isle of Wight
0
5
10
20 Kilometers
Health Status
100% – 76% remaining canopy
75% – 51% remaining canopy
50% – 26% remaining canopy
25% – 0% remaining canopy
Contains OS data © Crown Copyright and database right 2019


Ash Tree Survey Results Plan
Health Status 3 - 50% to 25% Total Canopy Remaining
Kent County
N
Surrey County
Hampshire County
West Sussex County
East Sussex County
The City of Brighton and Hove (B)
City of Portsmouth (B)
Isle of Wight
0
5
10
20 Kilometers
Health Status
100% – 76% remaining canopy
75% – 51% remaining canopy
50% – 26% remaining canopy
25% – 0% remaining canopy
Contains OS data © Crown Copyright and database right 2019


Ash Tree Survey Results Plan
Health Status 4 - 25% to 0% Total Canopy Remaining
Kent County
N
Surrey County
Hampshire County
West Sussex County
East Sussex County
The City of Brighton and Hove (B)
City of Portsmouth (B)
Isle of Wight
0
5
10
20 Kilometers
Health Status
100% – 76% remaining canopy
75% – 51% remaining canopy
50% – 26% remaining canopy
25% – 0% remaining canopy
Contains OS data © Crown Copyright and database right 2019


Ash Tree Hotspot Visualisation - Weighted by Tree Health
Surrey County
Kent County
Hampshire County
West Sussex County
East Sussex County
The City of Brighton and Hove (B)
City of Portsmouth (B)
Isle of Wight
0
5
10
20 Kilometers
N
Ash Tree Density - Weighted by Tree Health
High Risk
Low Risk
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