

Managing Data, Making Decisions:

Ash Die Back Disease (ADB)



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ADB Project Manager & Environmental Strategy Lead Officer

Background

- 2018 – ADB discovered
- Most populous tree across North Wales
- Scale????
- Threat???
- Cost???

UNKNOWN!




Existing Data

Exit Desktop Map Options Functions Previous Next Create Amend Confirm Cancel

Summary | Details | Attributes | Updates | Links | Contacts | Co-ordinates | Activities | Survey | Index Groups | Objects

Address CHAPEL STREET LLANDUDNO Section CCBC C/01156
 Location CHAPEL STREET
 Unit Type TREE Unit No. 8232 Item Status LIVE XSP Chainage Display Address
 Chainage 0.00 Grid Ref. 278010.72 382426.07
 Exp.Code Tag No. 0214 Plan No.
 Description PAVEMENT next to road. Some hollowness evident in stem but limited

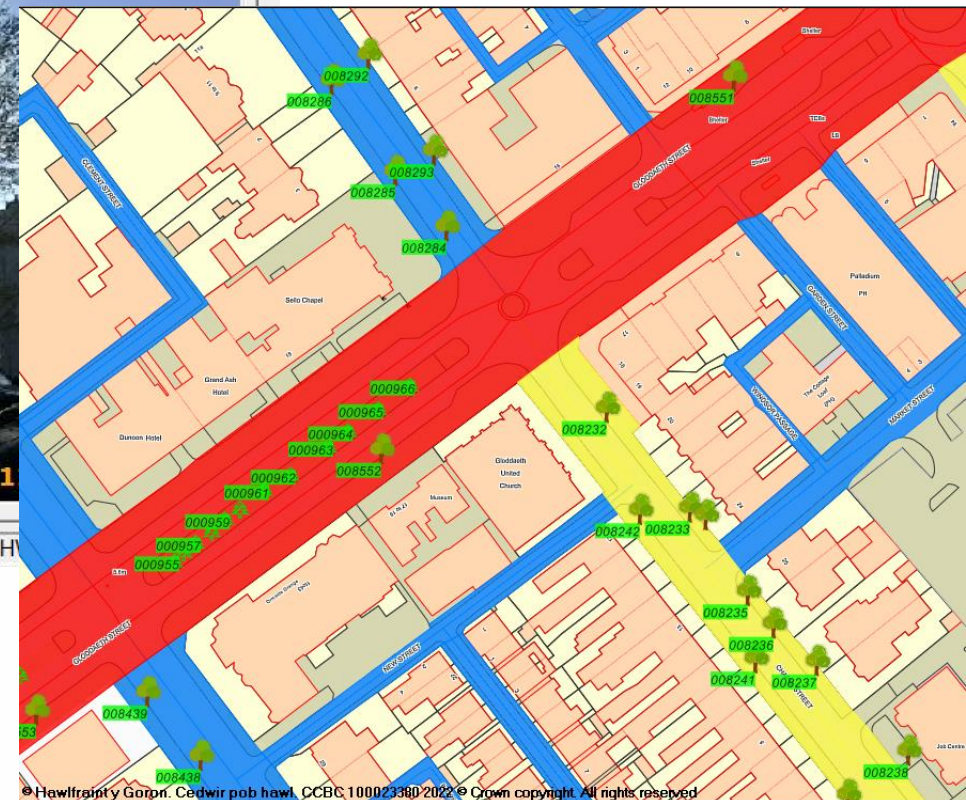
Attribute Title	Attribute Value
Photograph	DEMO_Q\2020_11\000324870_ATT_0020.jpg
Tree Type	Acacia
Ownership	ERF Land - Openspaces
MIS Verified	
Diameter at breast height	
Percent tree cover	
Percent measured	
Botanical Name	
Ash Dieback	<input type="checkbox"/>
Degree of Dieback	
Number of Trees	
Height of Trees	
MIS Action Taken	
Managing Services action Rec	
Managing Service Action taker	



AA001 HIGH

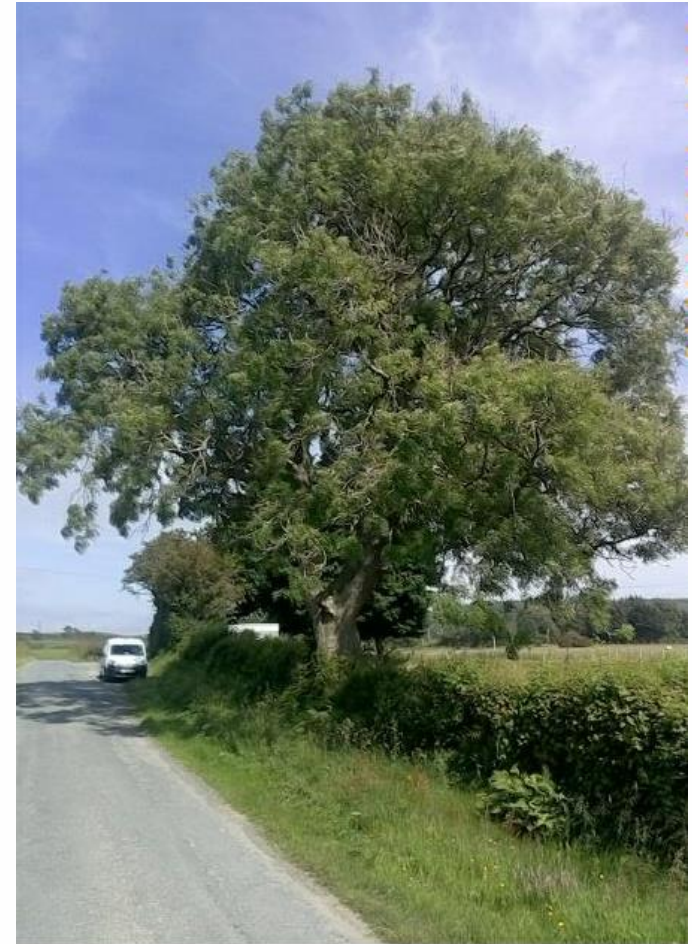
Pretty Good Asset Inventory?

- Highway Network linked to street gazetteer
- Adopted Highway Layer linked to above
- Started digital **urban street** tree data collection in 2014



Problem...

- Ash - more prevalent on
 - highway verges
 - woodland
 - in informal self-seeded growths
- Left clueless...
 - How many ash trees in the County?
 - Where are they?
 - What degree of risk?



Next Steps

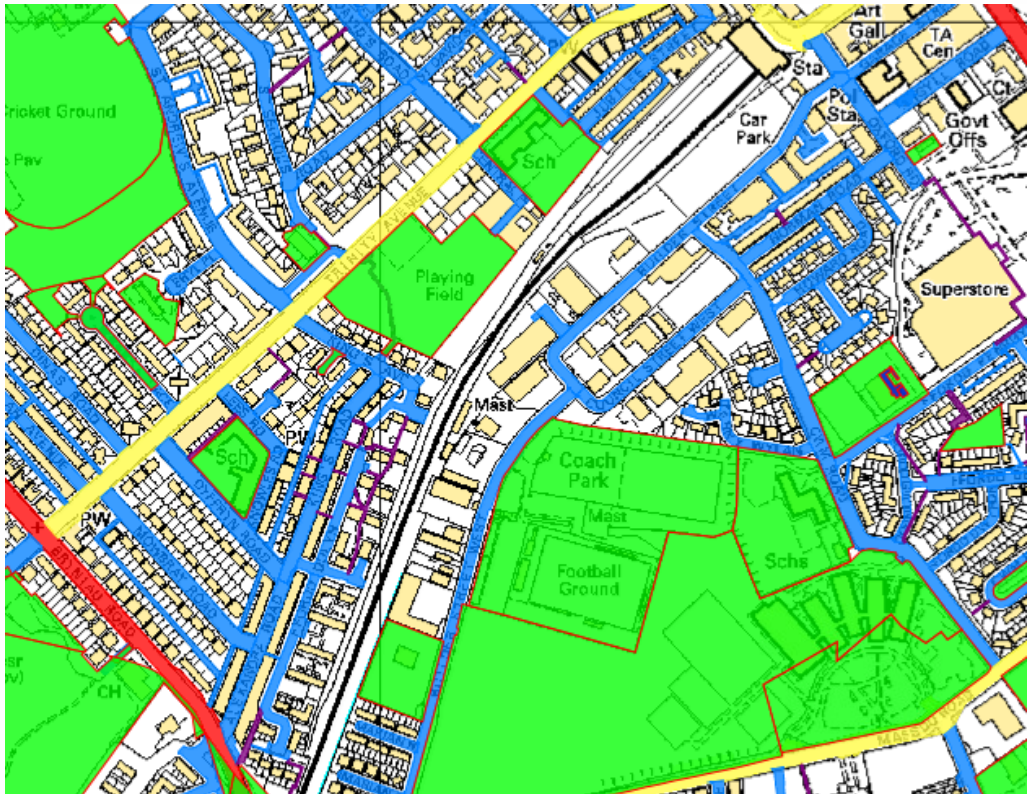


- Our “Trusty” Tablets
- Traditional Data Collection Methods



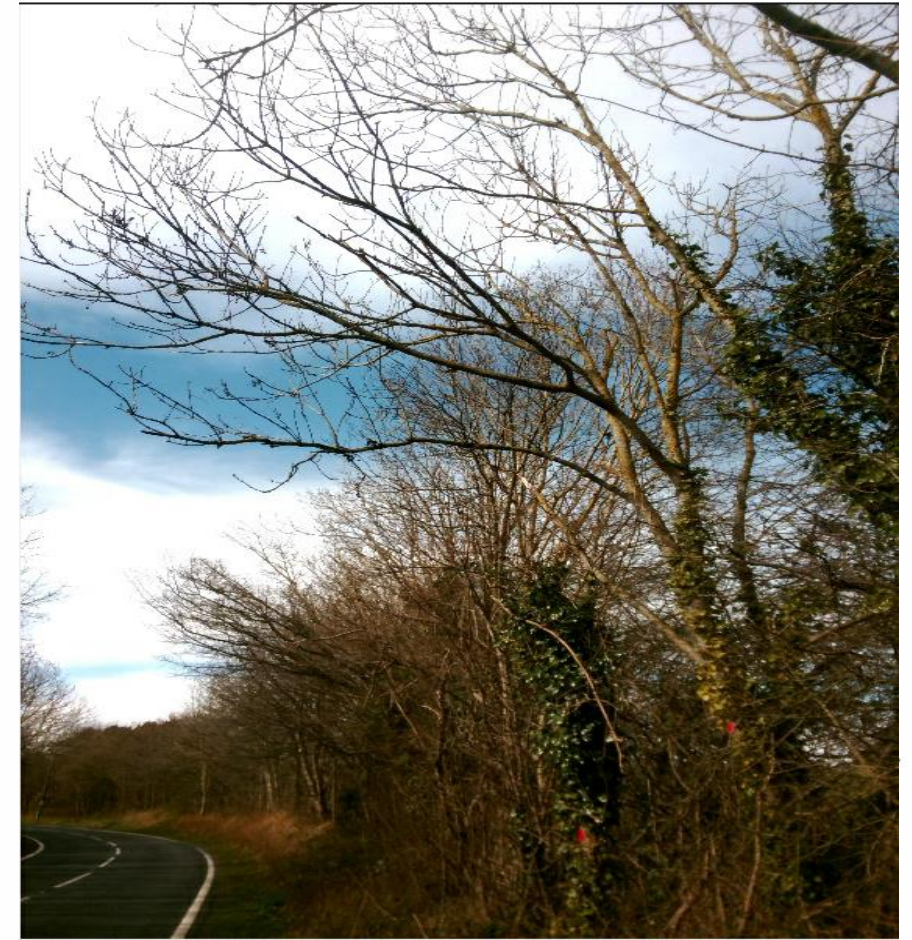
Scale - Too big

- 1669km Highway Network
- >11 million m² of CCBC Land
- >17 million m² of adopted highways



Timescales - Worrying

High risk of falling onto public areas - highways/ parks/ playgrounds/ schools



Surveying Highways

Moata Survey Technology provided by Mott MacDonald



Surveying CCBC Land

Internal Inspections



- Schools
- Parks
- Playgrounds
- Reserves
- Car Parks

Moata Survey Data



Moata Survey provided by Mott MacDonald

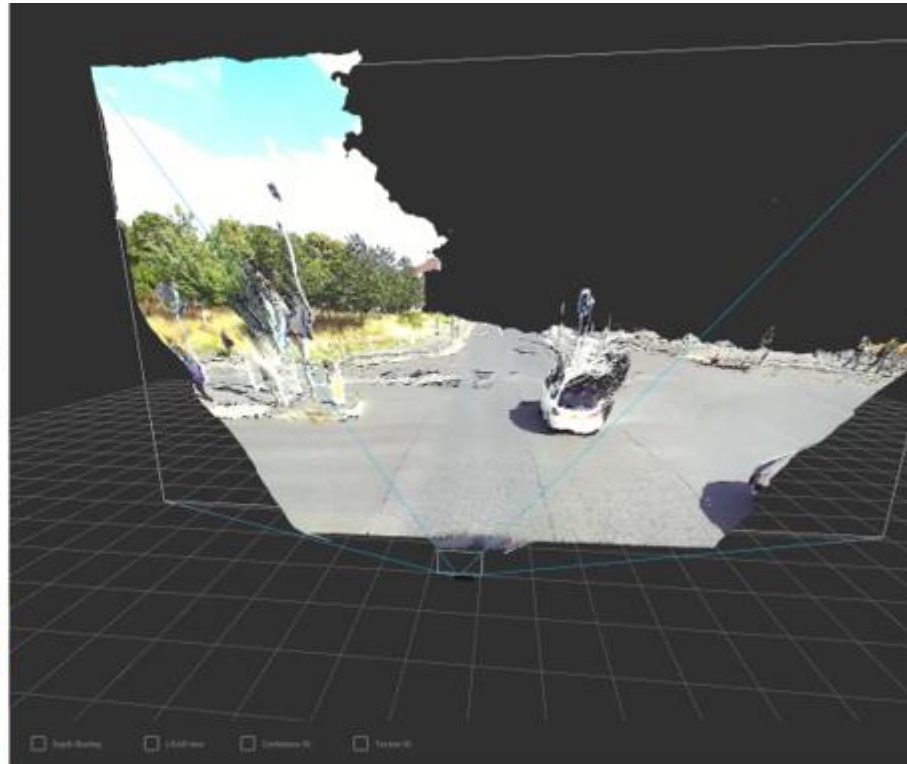
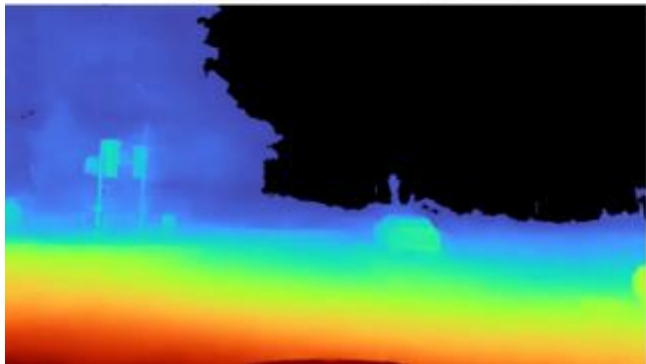
Network Hierarchy	Length Surveyed (km)	Overall Highway Network	Overall Survey Coverage %
CHSR	0	4	0%
CH1	41	41	100%
CH2	100	100	100%
CH3	192	192	100%
CH4	153	153	100%

In just 1 season – 30% Highway Network Surveyed



Vehicle mounted rig, travelling at traffic speed.

- Forward and rear facing stereo camera.
- Accurate GNSS positioning module.





Ash Tree

Conventional approach vs Moata Ash Dieback

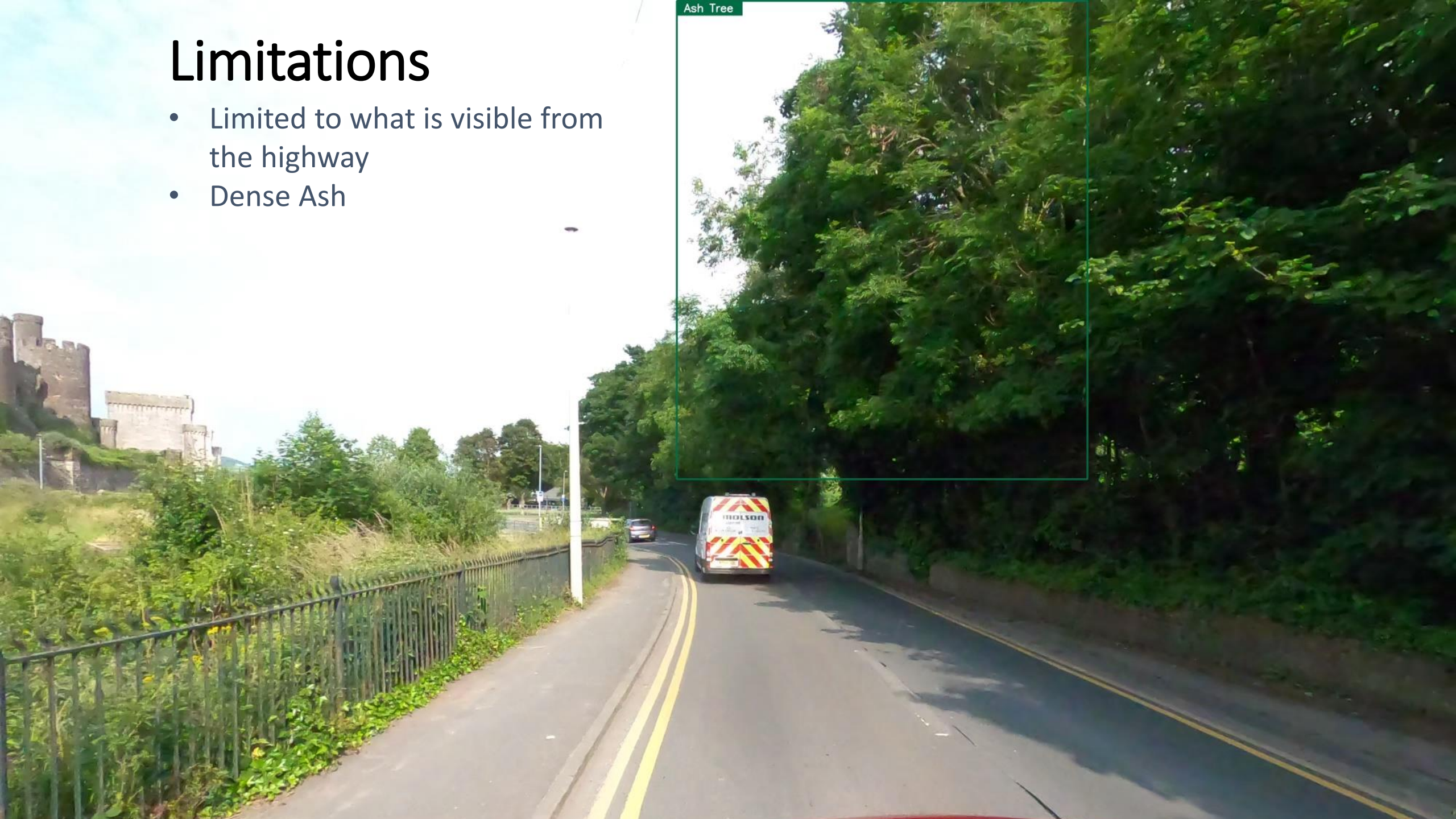
2 years of ground survey data collection vs two weeks of digital data collection



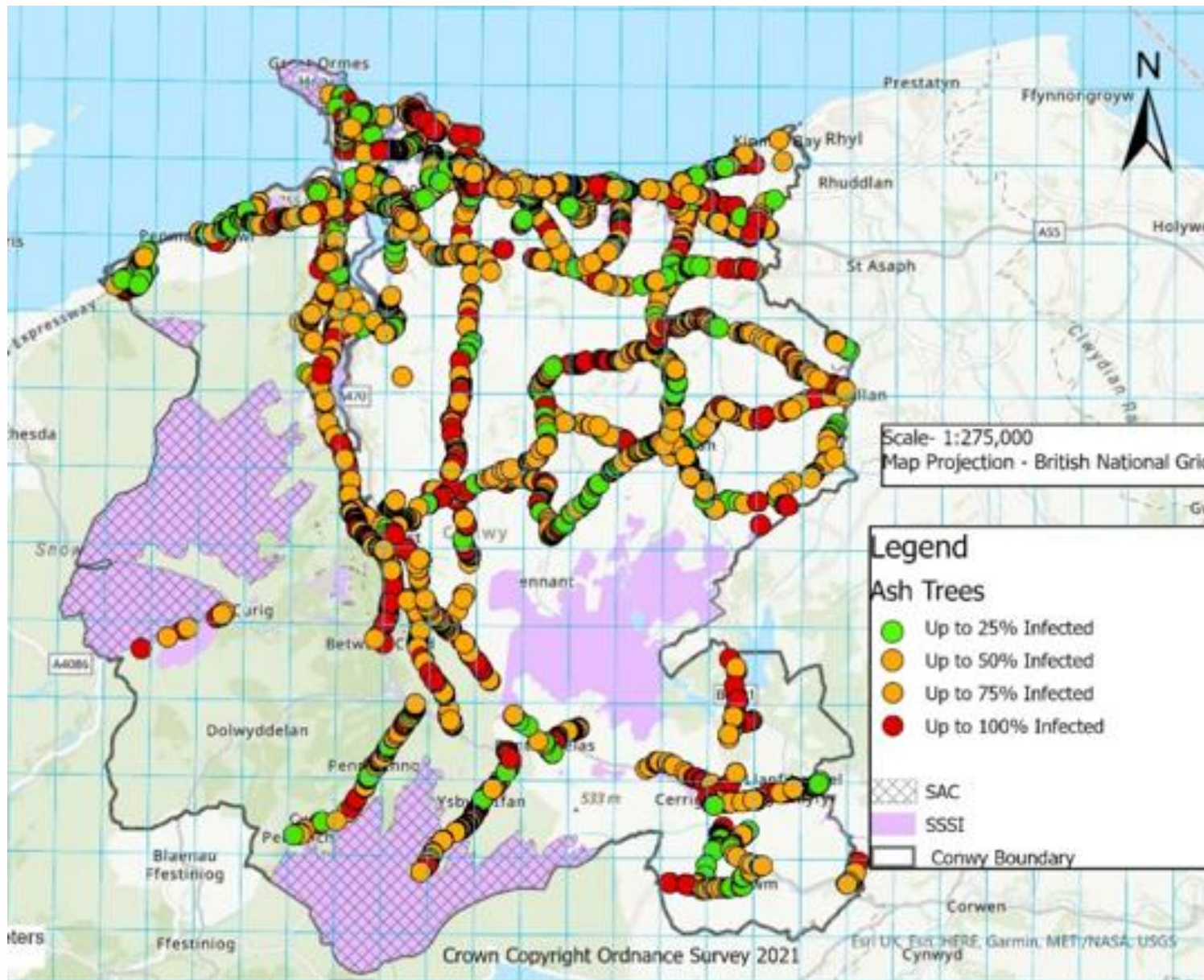
Estimated £60k to £180k Traffic management savings

Limitations

- Limited to what is visible from the highway
- Dense Ash



CCBC Spatial Analysis



ADB Located CH1-CH4 Network



Scale of ADB



Degree of ADB



Tree Height



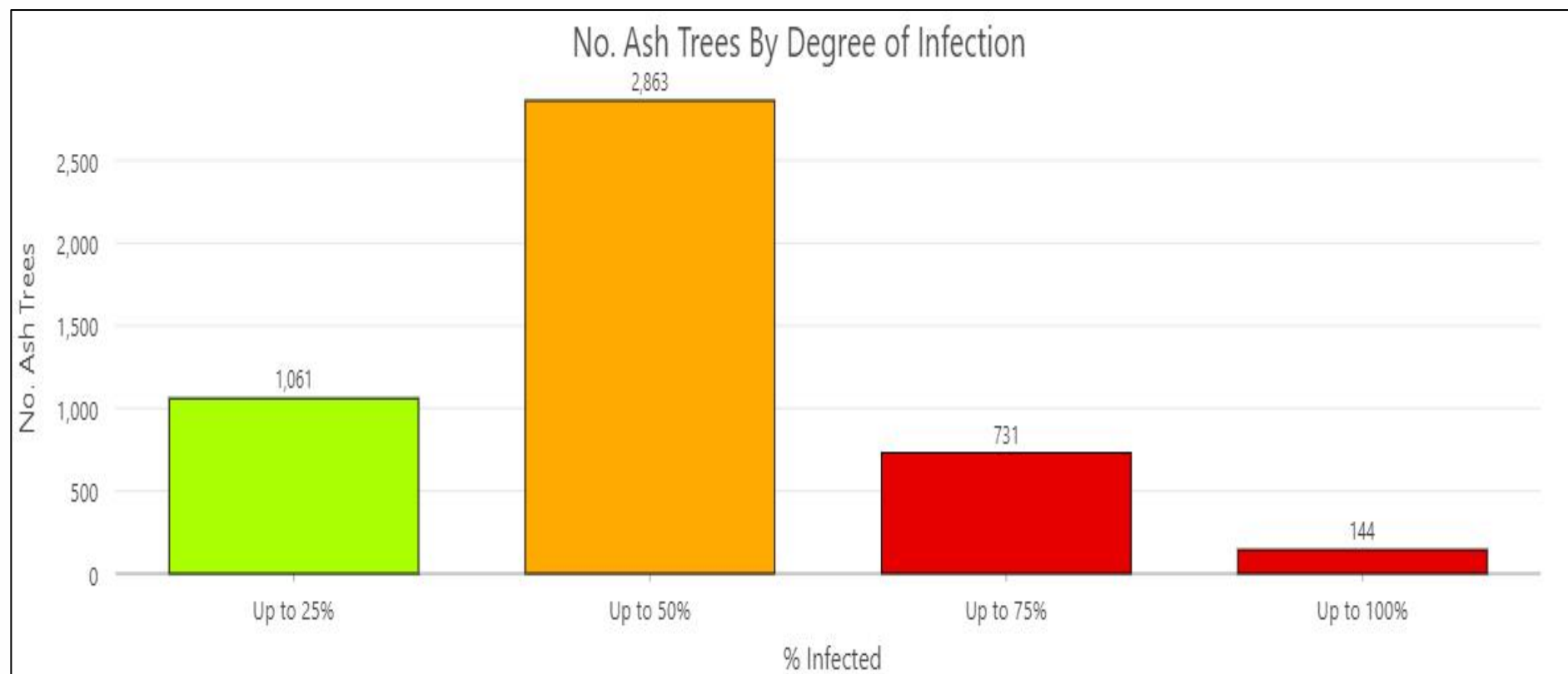
Photographic evidence

Overlaid with environmental data

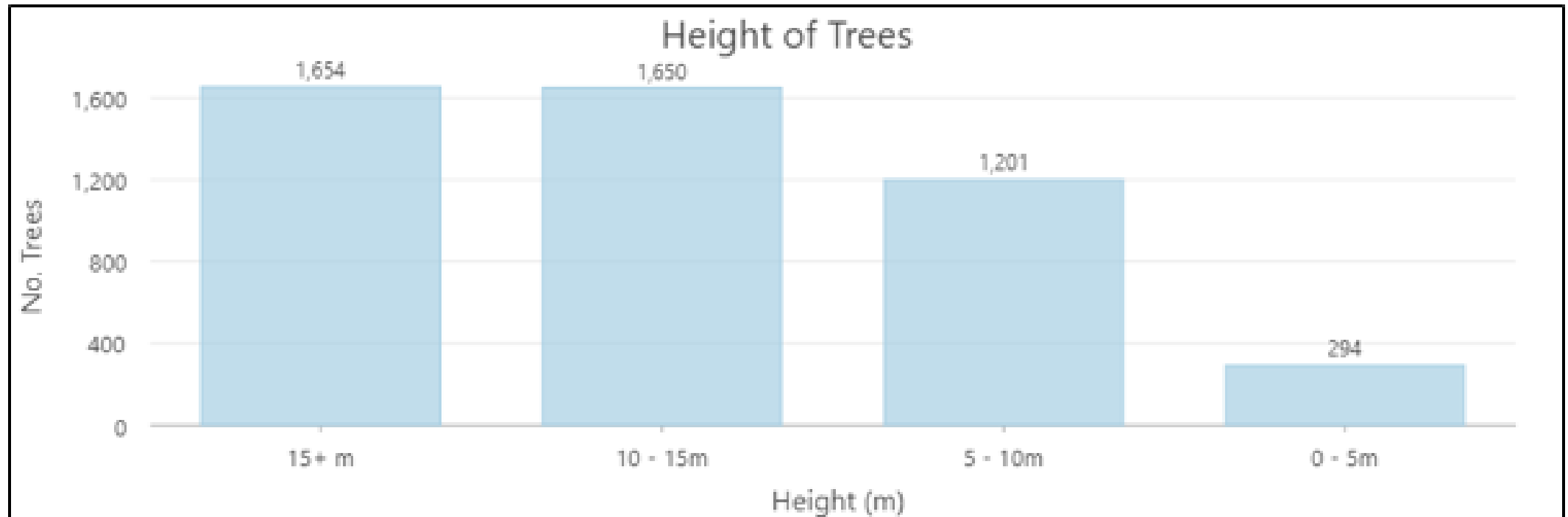
- SSSI
- SAC

Data Analysis

- Interrogate data
- Identify trees by condition
- Target prioritisation based on risk



Data Analysis



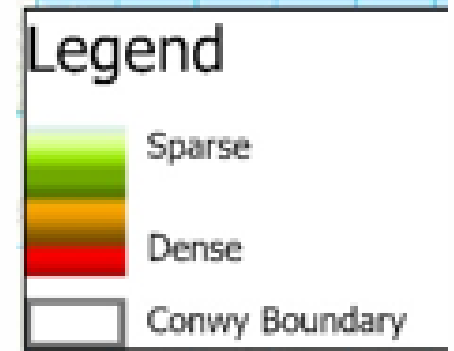
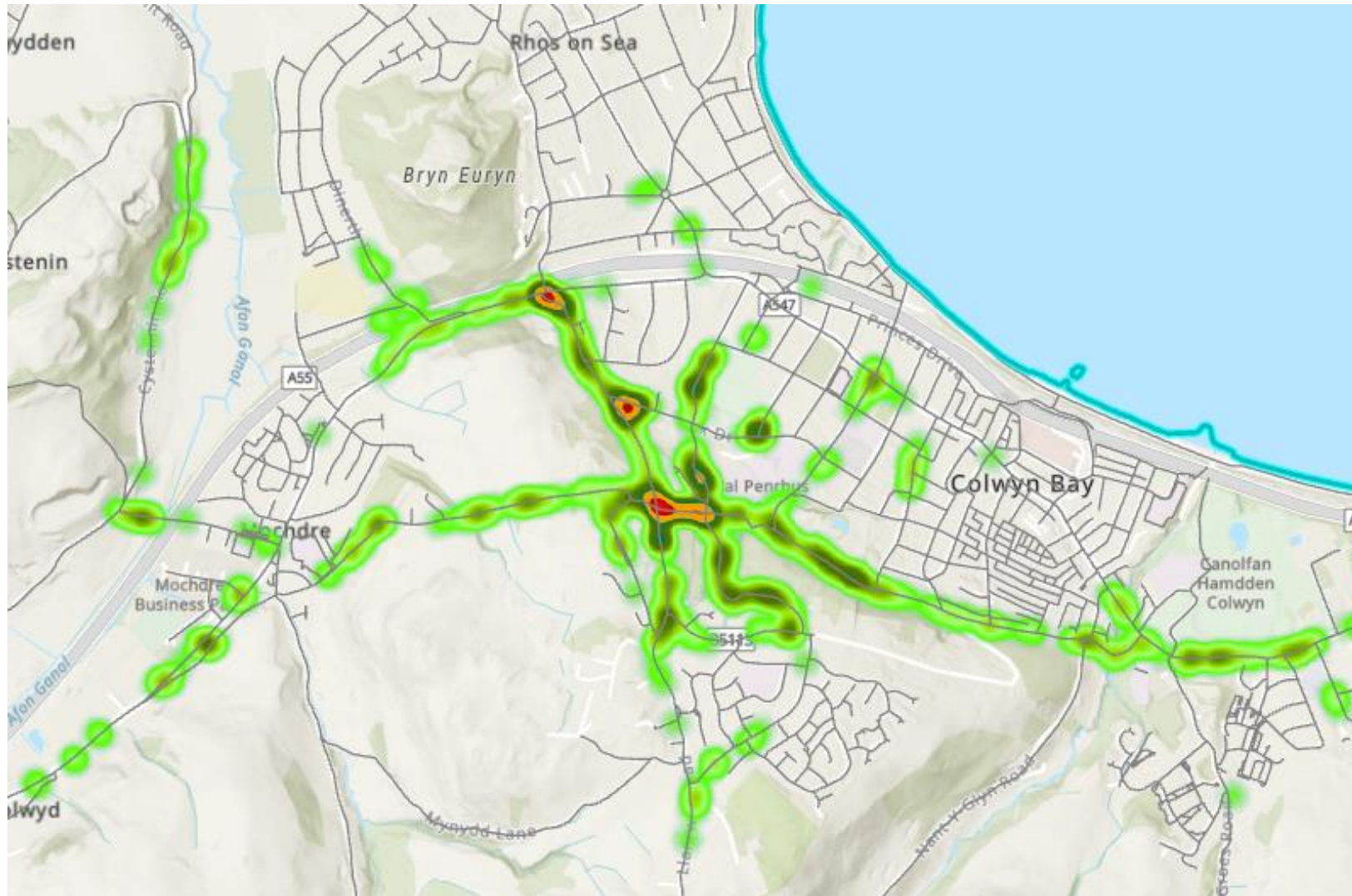
- Survey data picked up height of trees
- Allowing us to understand technical requirements to deal with trees

Cost – Actual Cost Forecast

Height of Trees	Average Daily Cost	Average No. Trees Removed Day Rate	Average Cost per Tree (£)	Degree of Dieback				Total Costs Raw Survey Inventory (£)
				Up to 25%	Up to 50%	Up to 75%	Up to 100%	
0-5m	1960	35	56	69	165	40	20	£ 16,464.00
5-10m	1960	27	72.59259	300	672	180	49	£ 87,183.70
10-15m	2503	8	312.875	367	987	244	52	£ 516,243.75
15m+	2503	4	625.75	325	1039	267	23	£ 1,034,990.50
Total No. Trees				1061	2863	731	144	
Total Cost				£ 343,835.65	£ 1,016,984.10	£ 258,723.42	£ 35,338.79	£ 1,654,881.95

- Condition & Height data enabled us to calculate short, medium and long term risks and costs associated with managing ADB

Prioritisation - Risk Based Approach – Tree Density

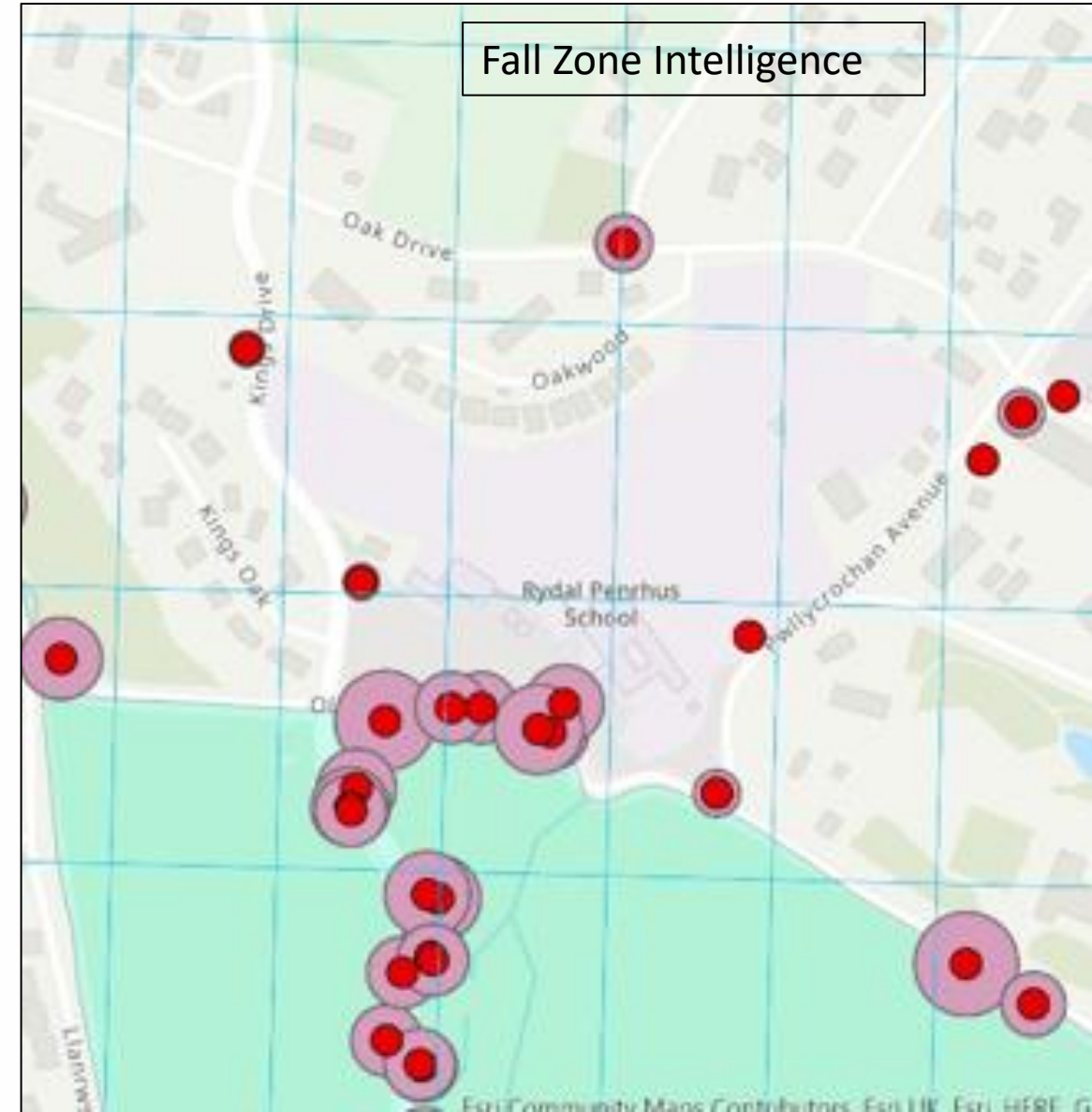


Prioritisation Intelligence

Prioritisation - Risk Based Approach – Fall Zones

Identify Network Sections and USRN's with greatest volume of dangerous trees

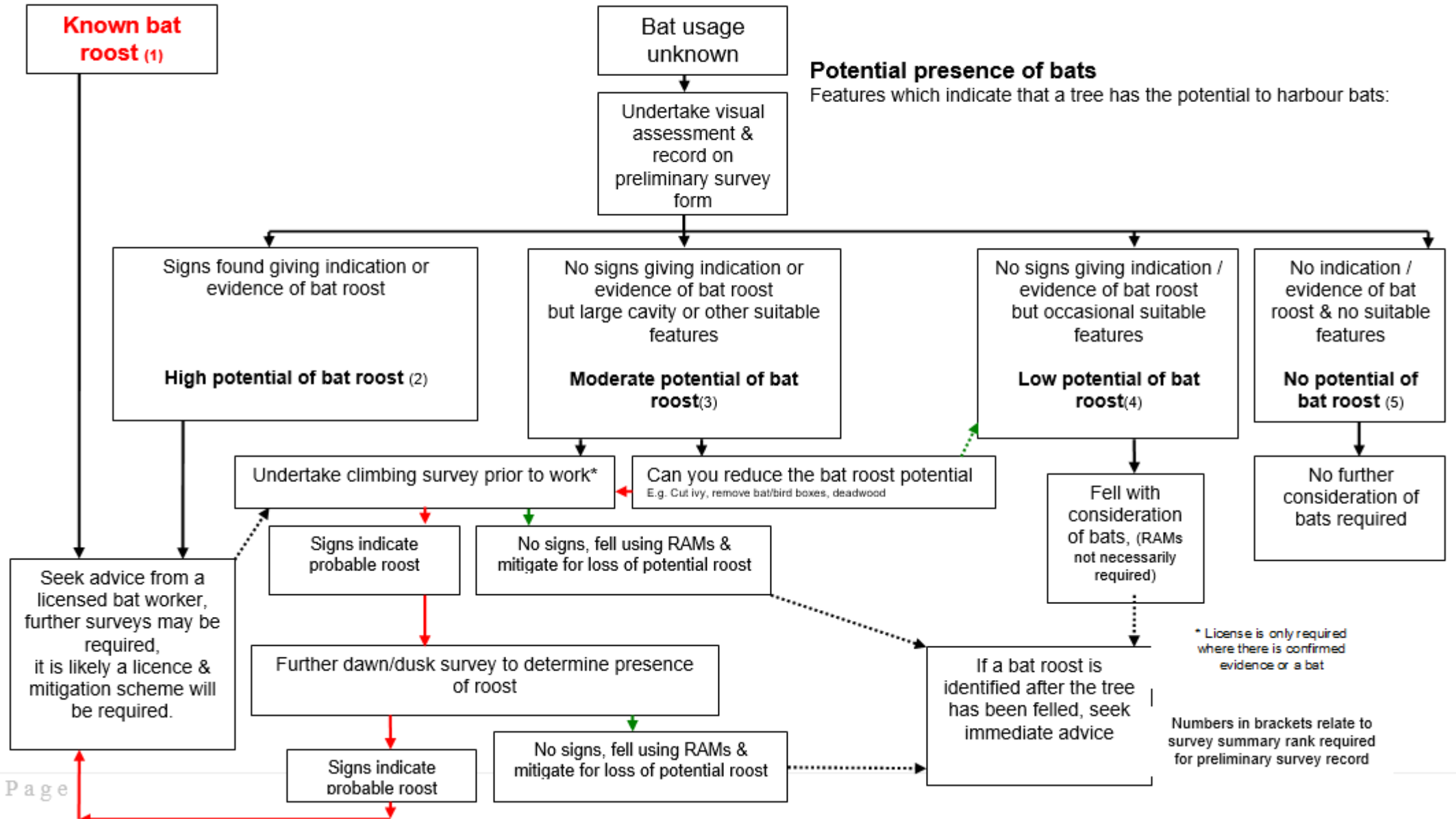
Network Section	No. Trees Up to and >75% ADB
B5106/99647	48
B5113/01766	33
B5113/99646/10	28
B5106/06421	19
A548/06419/20	15
B5113/99646/30	14
B4407/06420/30	12
A543/06477/20	11
A547/02258/35	11
B5113/06428	11
C/05403/10	11
C/05490	11
U/01803/20	11





Mitigation

Appendix A: Tree Works and Bat Protocol



Bat Risk Assessment

Site Name																				
Tree Number	Grid Reference																			
Species																				
Tree Description																				
Binoculars used to search for features used by bats <i>Presence of these does not indicate the presence of bats, just that the tree has the potential to provide a roost for bats</i>																				
Feature Present (✓)	Occasional	Frequent	Details...																	
Natural holes																				
Woodpecker holes																				
Cracks / splits in major limbs																				
Loose or flaking bark																				
Dense, thick stemmed ivy or other climbers																				
Hollows / cavities																				
Dense epicormic growth																				
Bird / bat boxes																				
Dead wood in canopy or stem																				
Any other relevant features																				
Binoculars used to search for signs of use by bats																				
Signs Present	✓	Details if yes...																		
Scratches/Staining/smoothing of surface around entry point																				
Bat droppings in, around or below entry point																				
Files around entry point																				
Distinctive smell of bats																				
Audible squeaking at dusk or in warm weather																				
Use your answers from the above questions and the matrix below to determine the potential of the tree to be used as a bat roost.																				
<table border="1"> <thead> <tr> <th colspan="2" rowspan="2"></th> <th colspan="3">Features</th> </tr> <tr> <th>No</th> <th>Yes Occasional</th> <th>Yes Frequent</th> </tr> </thead> <tbody> <tr> <th rowspan="2">Signs</th> <th>Yes</th> <td style="background-color: #ffcccc;">High (2) *</td> <td style="background-color: #ffcccc;">High (2)</td> <td style="background-color: #ffcccc;">High (2)</td> </tr> <tr> <th>No</th> <td style="background-color: #ccffcc;">No (5)</td> <td style="background-color: #ffffcc;">Low (4)</td> <td style="background-color: #ffcc99;">Moderate (3)</td> </tr> </tbody> </table>						Features			No	Yes Occasional	Yes Frequent	Signs	Yes	High (2) *	High (2)	High (2)	No	No (5)	Low (4)	Moderate (3)
		Features																		
		No	Yes Occasional	Yes Frequent																
Signs	Yes	High (2) *	High (2)	High (2)																
	No	No (5)	Low (4)	Moderate (3)																
<i>* This situation is unlikely Survey summary rank in brackets</i>																				
Survey summary rank:																				
1 = known roost, 2 = high potential, 3 = moderate potential, 4 = low potential, 5 = no potential. See bat roosts and tree work flow chart.																				
Recommendations:																				
Signed:		Name:																		
		Date:																		

Ecological Surveys



Tree features are checked using an endoscope by a Bat specialist



- Area of decay end of limb & large cavity formed behind decay
- Cavity inspected with endoscope – no evidence of bats found
- Considered high potential to be used by bats
- Several other small holes were inspected on higher limbs
- None suitable for roosting bats
- Mitigation- tree reduced in height but the limb with the PRF (possible roost feature) retained
- low target deadwood retained to provide habitat and food source for a range of species



Deadwood and features retained

Operational Impacts

- Operational phase started before the strategic planning completed
- 474km Highway Network Surveyed in 1 season (2021)
 - 1/4 of which treated
 - Approx. 600 areas of high risk trees removed
 - All schools, parks, playgrounds with trees in high infection band treated by August 2022
- Targeted resources to high risk areas
- Mitigation measures
 - Reducing potential future impacts against biodiversity and ecosystems – retaining natural habitats/features/deadwood



Asset Management System

Insight Enterprise - Asset Register - Item Details

File Reports Shortcuts Tools Go to Help

Exit Desktop Map Options Functions Previous Next Create Amend Confirm Cancel

Summary Details Attributes Updates Links Contacts Co-ordinates Activities Survey Index Groups Objects

Address ABERGELE ROAD COLWYN BAY CCBC A547/01653

Location


Unit Type TREE Unit No. 585687 Item Status LIVE XSP Chainage Display Address

Chainage 0.00 Grid Ref. 285944.00 378253.00

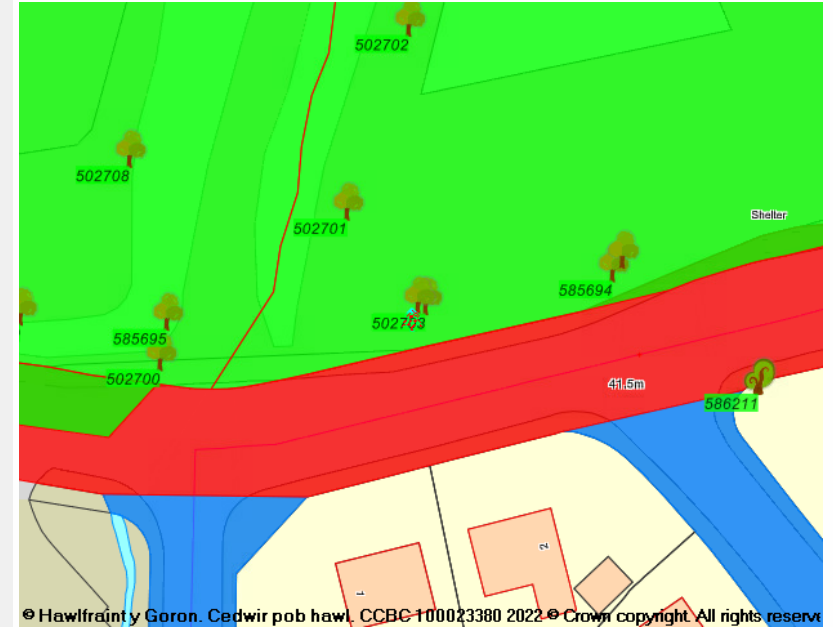
Exp.Code Tag No. Plan No.

Description

Attribute Title	Attribute Value
REQUIRES NRW	
Re Inspection Frequency	
External Survey ID	2324.00
Asset Source	Mott MacDonald Survey
Fall Area	233.00
Photograph	K:\Symology\CCBC\Assets\Trees\Tree Assets
Tree Type	Ash
Ownership	CCBC
MIS Verified	Yes
Diameter at breast height	
Percent tree cover	
Percent measured	
Botanical Name	
Ash Dieback	<input checked="" type="checkbox"/>
Degree of Dieback	Up to 75%

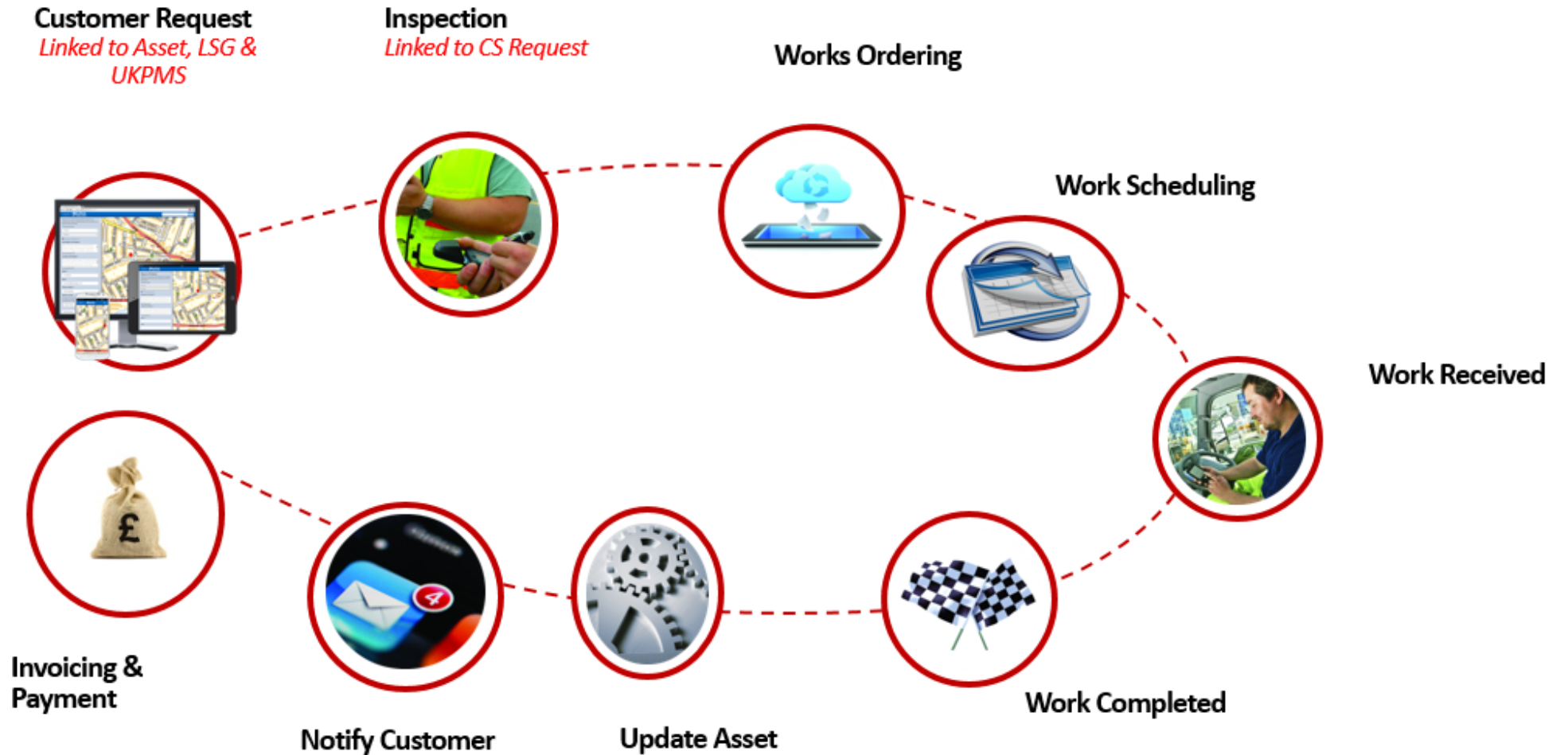


AA001 HIGHWAYS LIVE 18/03/22



Data loaded into existing Asset Management System

Asset Lifecycle - Reactive Maintenance



Issuing Informal & Formal Highways Act Notices

Licence No.	00043325	Stage	COMMENCED	Licence Type	AD3	Ash Dieback 3 Month Notice	<input type="checkbox"/> T/S	<input type="checkbox"/> P/S	<input type="checkbox"/> L/R
Charge Code	00043318	External Ref.		Unit Type	LAND QUERY	<input type="checkbox"/> Permit Scheme	<input type="checkbox"/> E/D	<input type="checkbox"/> S/R	<input checked="" type="checkbox"/> Oth
Address	NANT ISAF TO BRYN RHUG CAPEL GARMON	Unit No.	686						
Location	CYM767840								Grid Ref. 281718.00 357624.00


Adran Yr Amgylchedd, Ffyrdd a Chylleusterau
 Environment, Roads & Facilities Department
 Pennaeth Gwasanaeth
 Head of Service - Geraint Edwards, BEng(Hons) CEng FICE
 Cyfeiriad Post / Postal Address: P.O. Box 1, Conwy, LL30 9GN

☎ 01492 57-5337
 📠 01492 57-5199
 ✉ erfms@conwy.gov.uk
 Ein Cyf / Our Ref: 43325
 Eich Cyf / Your Ref:
 Dyddiad / Date: 13/01/2022

Dear Sirs,

ASH DIEBACK DISEASE - CYM [REDACTED]

We recently identified an overhanging ash tree(s) from your property which is exhibiting severe symptoms of ash dieback disease (*Hymenoscyphus fraxineus*) and which therefore endangers the passage of vehicles / pedestrians. The location of the ash tree(s) is shown on the enclosed plan.

The law says that landowners are responsible for trees and vegetation growing on their property. Owners have a duty to ensure that they do not obstruct or endanger roads and footpaths. Please arrange to address the danger presented by this tree(s) within 3 calendar months of the date of this letter (this will normally involve felling the tree). Failure to address the danger will result in the issue of a formal Notice requiring compliance within 14 days. In the event of non-compliance we will undertake the works ourselves and recover costs from you.

When you do the work, please make sure that you immediately remove cuttings which fall onto the road, roadside ditches or footpaths. You can find more advice and guidance on our website, including information about nesting birds and small mammals:
<https://www.conwy.gov.uk/en/Resident/Planning-Building-Control-and-Conservation/Trees-and-High-Hedges/Trees-and-Hedges-General-Information.aspx> (or search "Trees and Hedges" from the website's homepage).

Please act on this request to avoid the need for us to take any formal action.

Yours faithfully,




for G.B. Edwards
Head of Environment, Roads & Facilities


Rydym yn croesawu gohebiaeth yn Gymraeg. Byddwn yn ymateb i unrhyw ohebiaeth yn Gymraeg ac ni fydd hyn yn arwain at unrhyw oedi.
 We welcome correspondence in Welsh. We will respond to any correspondence in Welsh which will not lead to a delay.

CYNLLUN O'R SAFLE
 Llecyn coedwig y mae gofyn ichi gael golwg arno.

LOCATION PLAN
 Area of trees requiring your investigation.



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Summary

Outcomes – Survey Data

- Speed
- Cost savings in inspection costs (TM)
- Great indicator - Authority focus
- Awaiting 2022 survey data next month – all CH5 Rural (approx. 500km)
- Next year CH5 Urban and resurveying CH1-4 <50% ADB
- **Proof of concept surveys (PRoW, Parks, LNR's)**

CCBC Analysis

- Accelerated action & adopted risk based approach
- Tree density maps
- Fall zones

- All trees from CH1-CH4 survey results in high risk category have been completed

Next Steps

- **Recovery Plan**

