Forest Research

Historic Urban Canopy Cover: 10 case studies from Great Britain

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What is urban canopy cover?

A land cover classification

The layer of leaves, branches, and stems of trees that cover the ground when viewed from above

(e.g. Grove et al., 2006; Pasher et al., 2014; USDA, 2008)

Overview

- Historic urban canopy cover assessments
- Previous studies
- Approach
- Historic urban canopy cover change in Great Britain: 10 case studies
- What Next?
- Concluding Remarks
- Questions

What are historic urban canopy assessments and why are they important?

The use of historical information to examine changes in canopy cover in urban areas over time

Leads to the facilitation of improved management plans for urban forests in the future, in order to sustain ecosystem services for future generations

Identify the effectiveness of past management (Merry et al., 2014)

Contribute to the understanding of long term dynamics of urban vegetation, and can inform future management (Diaz Porras, Gaston and Evans, 2014; Merry et al., 2014).

Previous Studies

Urban Areas, United States
Nowak and Greenfield (2018)

Oakland, California, United States
Nowak (1993)

Detroit, Michigan, and Atlanta, Georgia, United States
Merry et al. (2014)

Low resolution Great Britain, focus on Urban areas
Buckland (2018)

Minnesota's Twin Cities Metropolitan Area, United States
Berland (2012)

Sheffield, UK
Diaz-Porras, Gaston and Evans (2014)

Los Angeles, California, United States
Gillespie et al. (2011)

Wales' Towns and Cities
Natural Resources Wales (2016)

University of Pennsylvania, Philadelphia, United States
Roman et al. (2017)

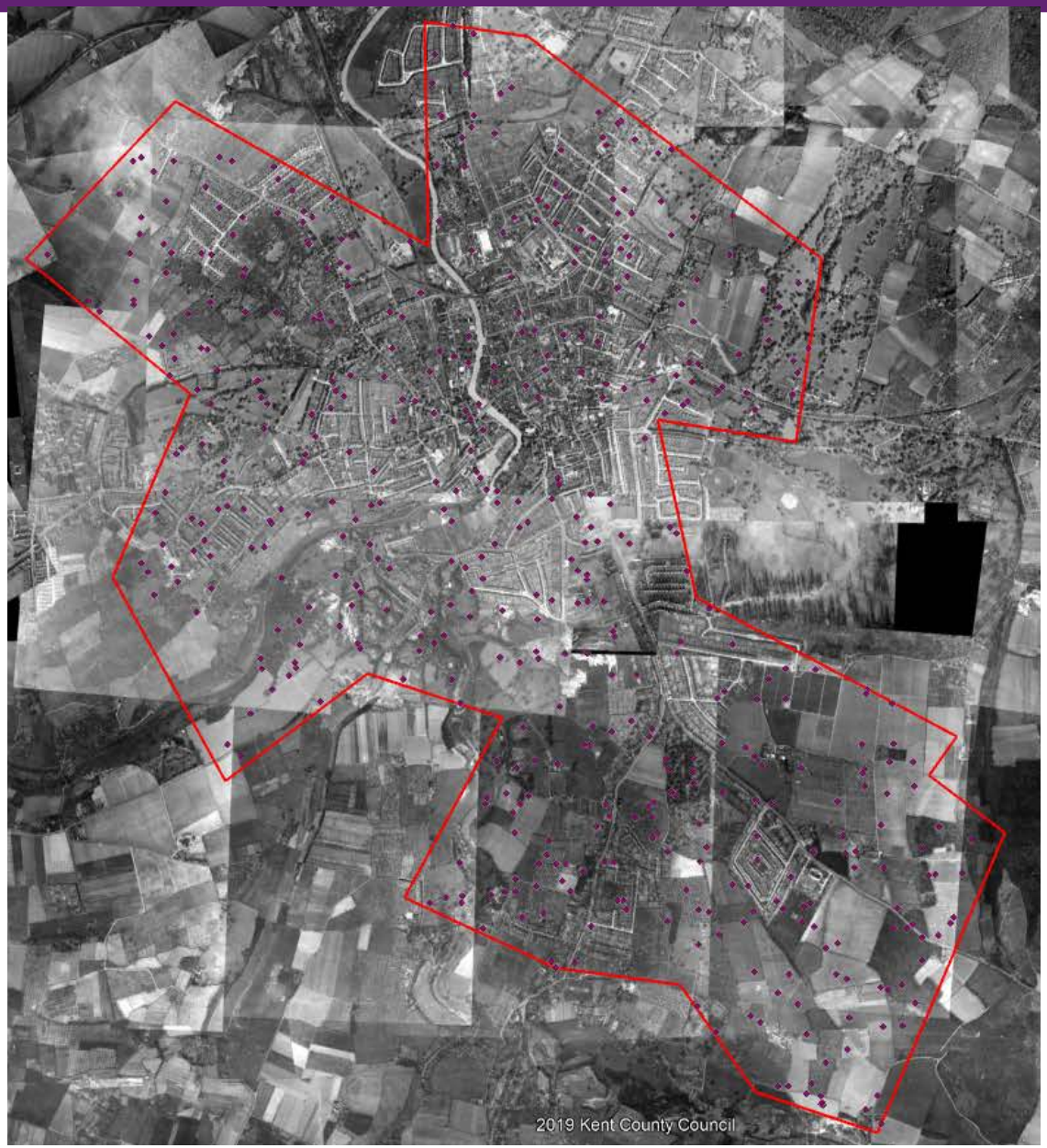
20 Cities, Conterminous United States
Nowak and Greenfield (2012)

Syracuse, New York, United States
Nowak et al. (2016)

Suburbs, Melbourne, Australia
Kaspar et al. (2017)

Urban Area	Number of Points
Maidstone	500
Edinburgh	805
Cardiff	925
Swansea	500
Birmingham	500
Milton Keynes	500
Oxford	500
Newcastle	521
Darlington	488
Chester	493
Average	**573**

Edinburgh, 2016



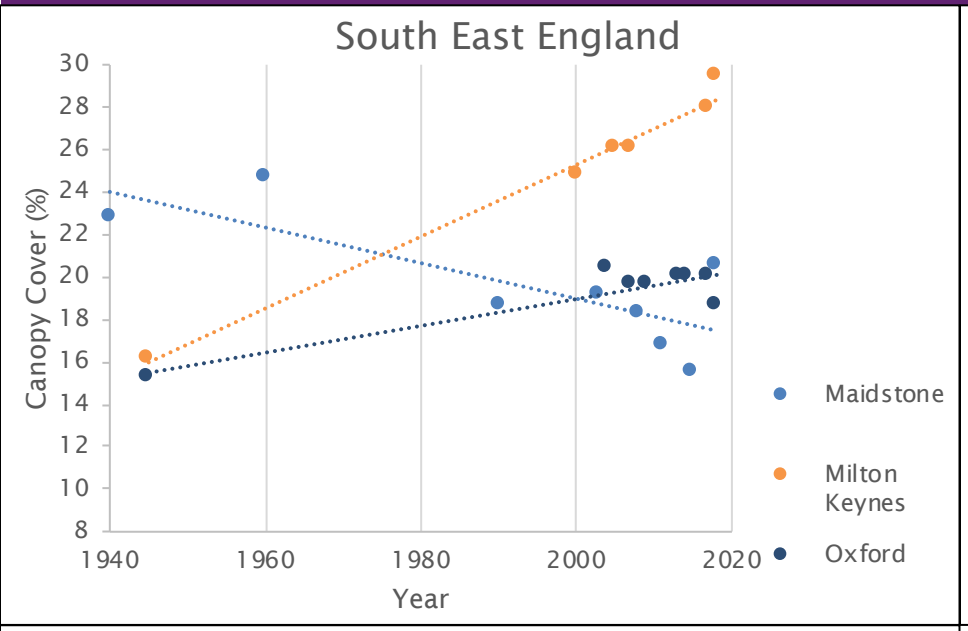
Maidstone, 1940

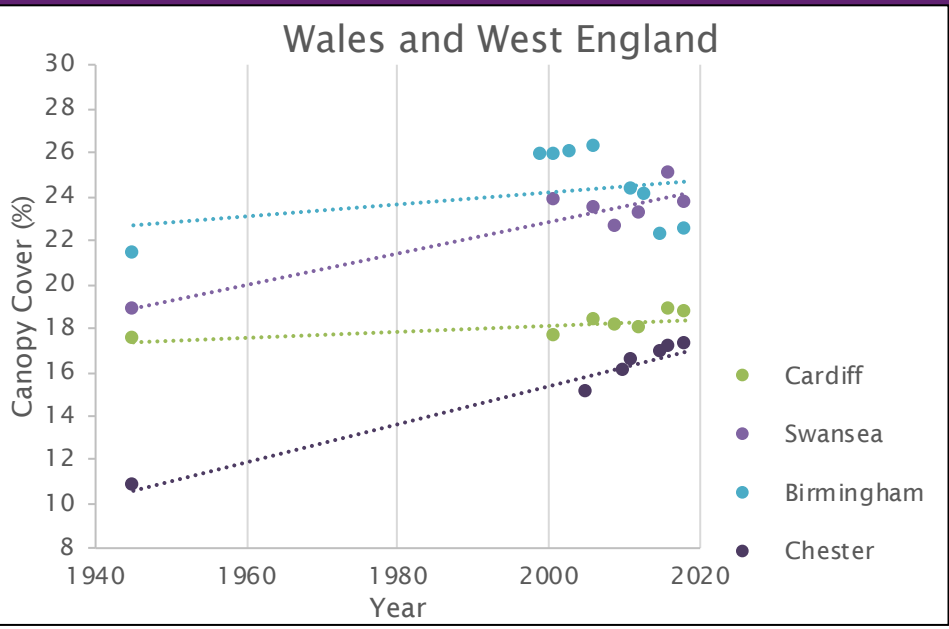
Birmingham, 1945

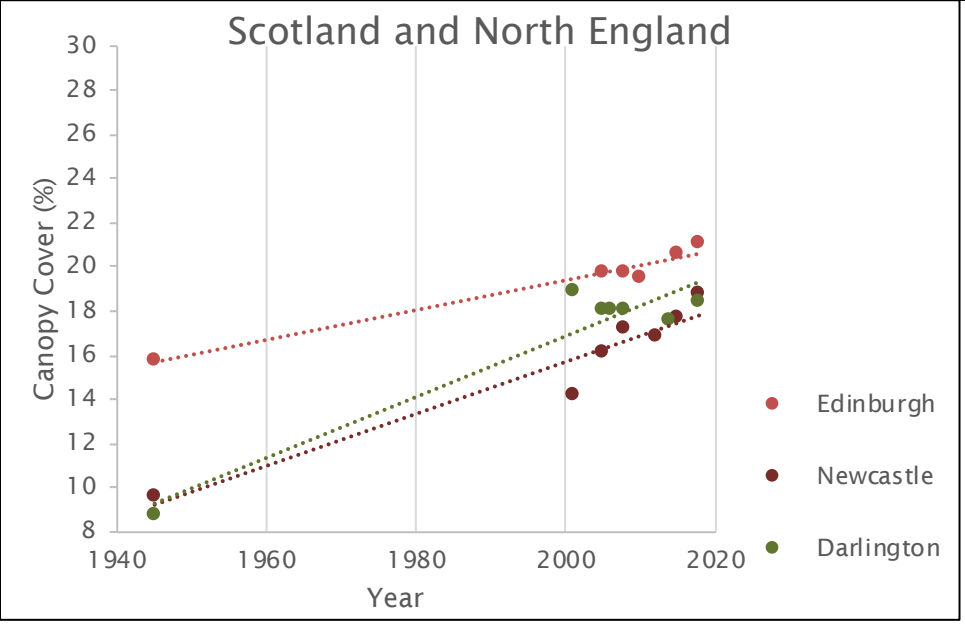
www.britainfromabove.org.uk


1999
2001
2003
2007
2013
2018
Birmingham

1940–2018

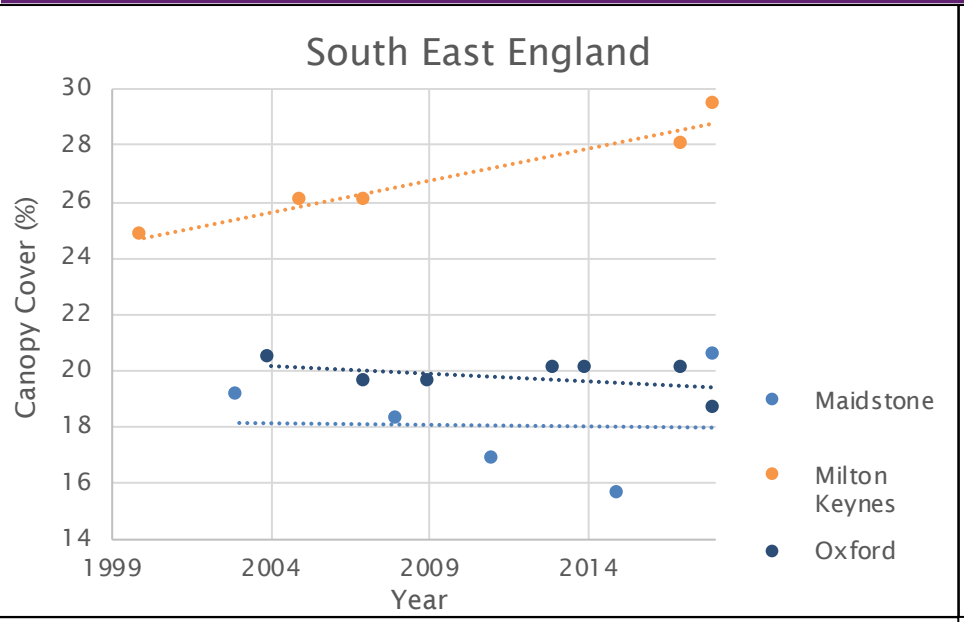


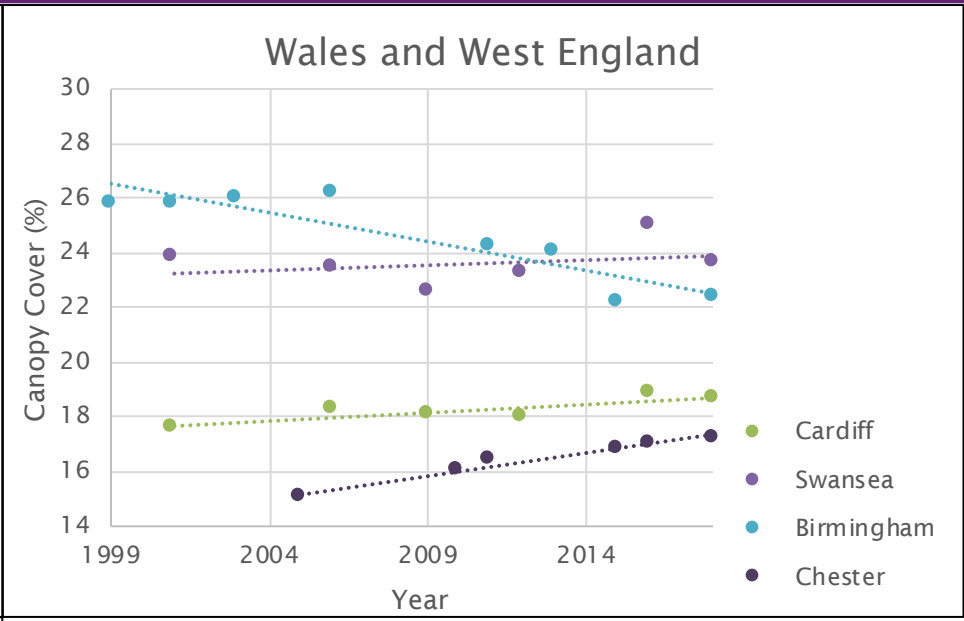


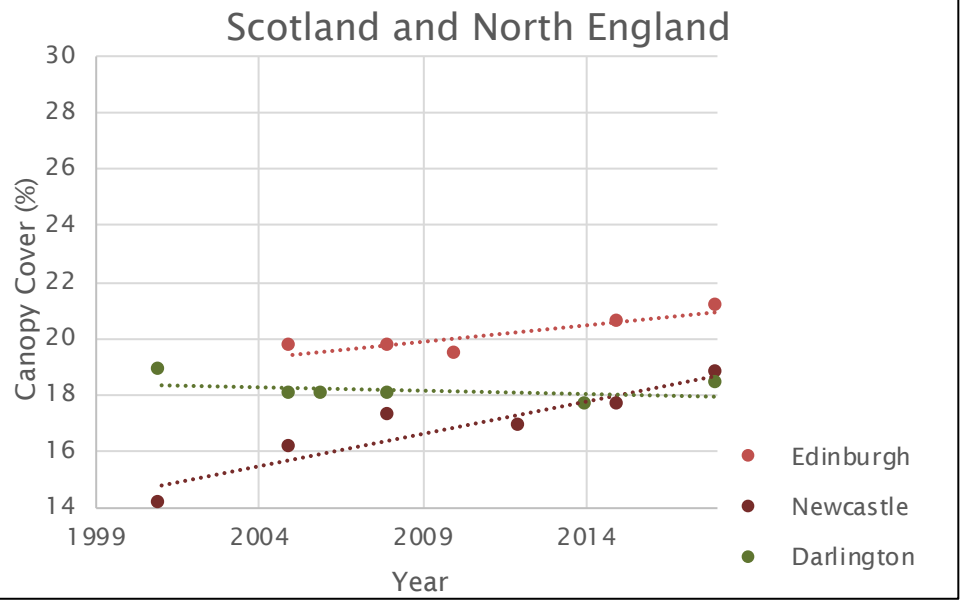


- 7 urban areas show increase, 4 statistically significant ($p > 0.05$, 95% CI)
- 2 urban areas (Cardiff and Birmingham) little to no change ($-0.05 < p < 0.05$)
- 1 urban area (Maidstone) shows statistically significant decline ($p < -0.05$, 95% CI)

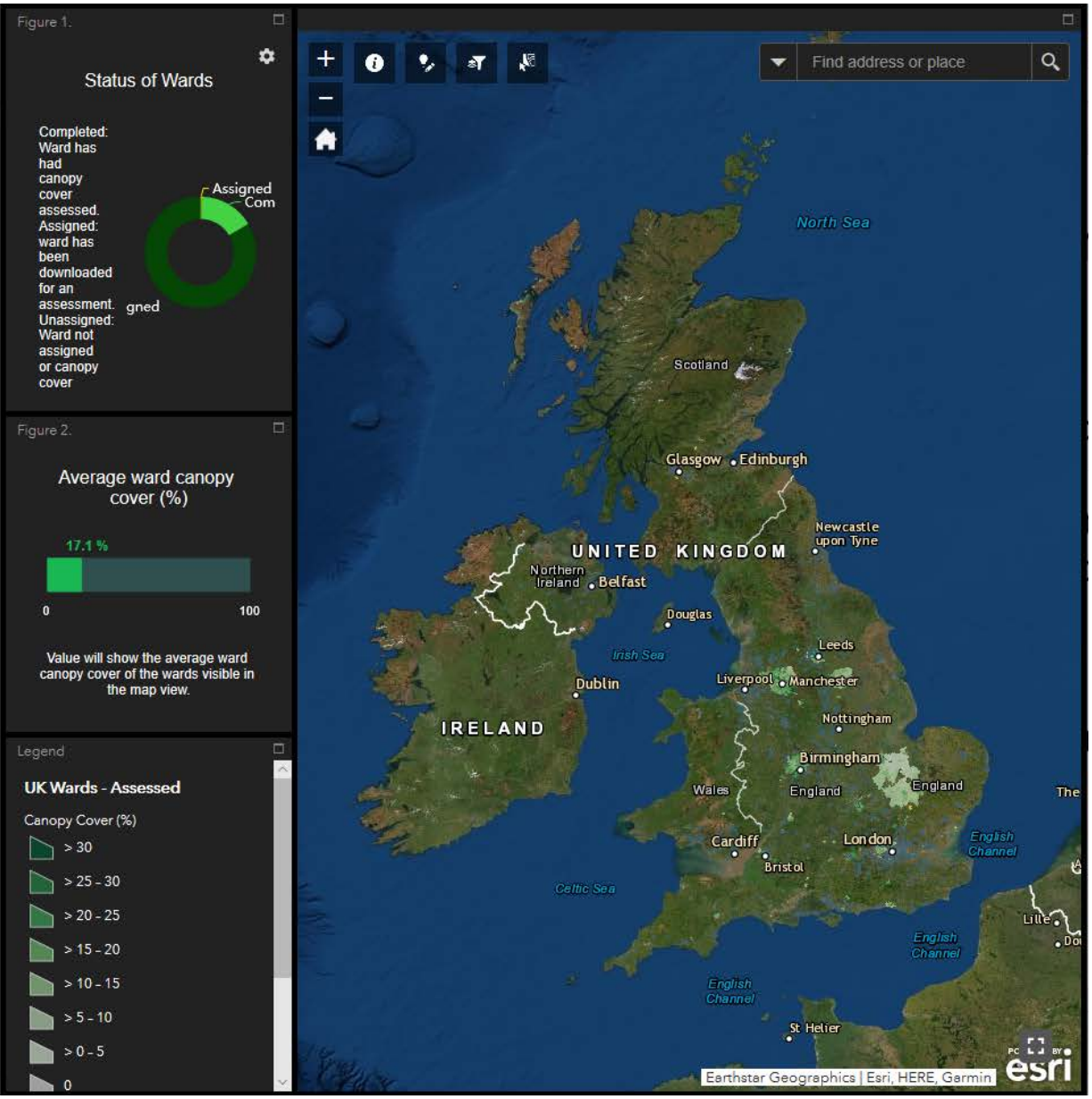
1999-2018





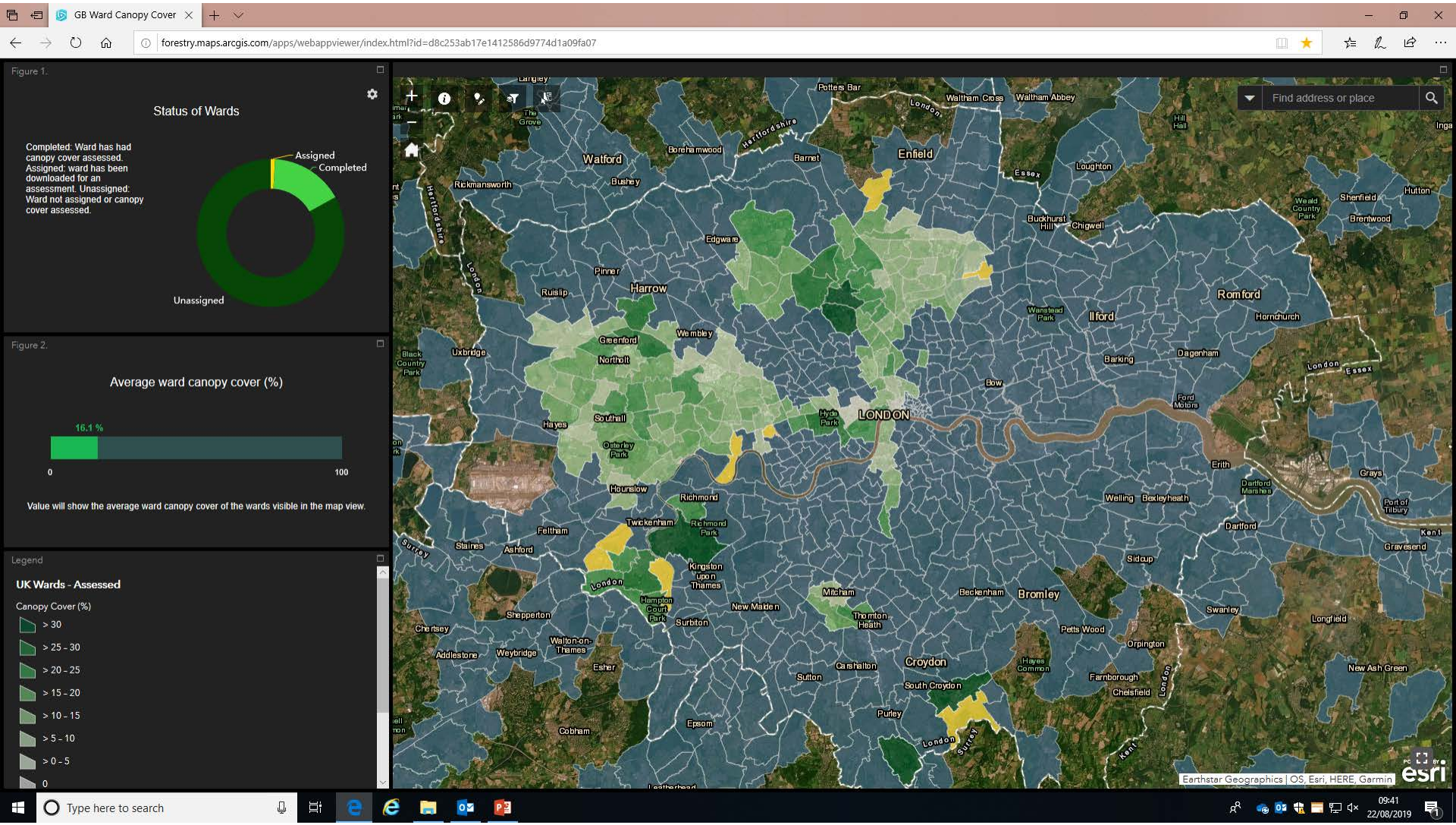


- 5 urban areas show increase ($p > 0.05$)
- 3 urban areas show little to no change ($-0.05 < p < 0.05$)
- 2 urban areas show decline ($p < -0.05$)



What Next?

Canopy Cover Webmap



https://bit.ly/2PT8Mlo

Concluding remarks

- 1940s–2018:
  - 4 urban areas statistically significant increase
  - 1 statistically significant decline
- 1999–2018:
  - 5 urban areas increase
  - 2 decline

Questions?

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Canopy Cover Webmap:
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