

Examples of Automated Zone Design in practice

Professor David Martin

Automated zone design in practice

- Automated zone design has been used by the Office for National Statistics in England and Wales:
 - 2001 Output Areas
 - 2004 Lower Layer Super Output Areas
 - 2011 Output Areas
 - 2011 Lower Layer Super Output Areas
 - 2011 Workplace Zones
- Northern Ireland 2001/11 output areas/small areas
- Northern Ireland/Scotland 2011 Workplace Zones under production (April 2016)

Common features

- Output Area creation independent of the geography of enumeration
- Underlying zone design based on synthetic postcode (or part postcode) polygons built around addresses, clipped to major topographic features
- Output Areas provide foundation for Lower and Middle Layer Super Output Areas and also Workplace Zones in each of 2001 and 2011 Censuses
- All nest within Local Authority District boundaries in place at the time of creation

2001 Census Output Areas

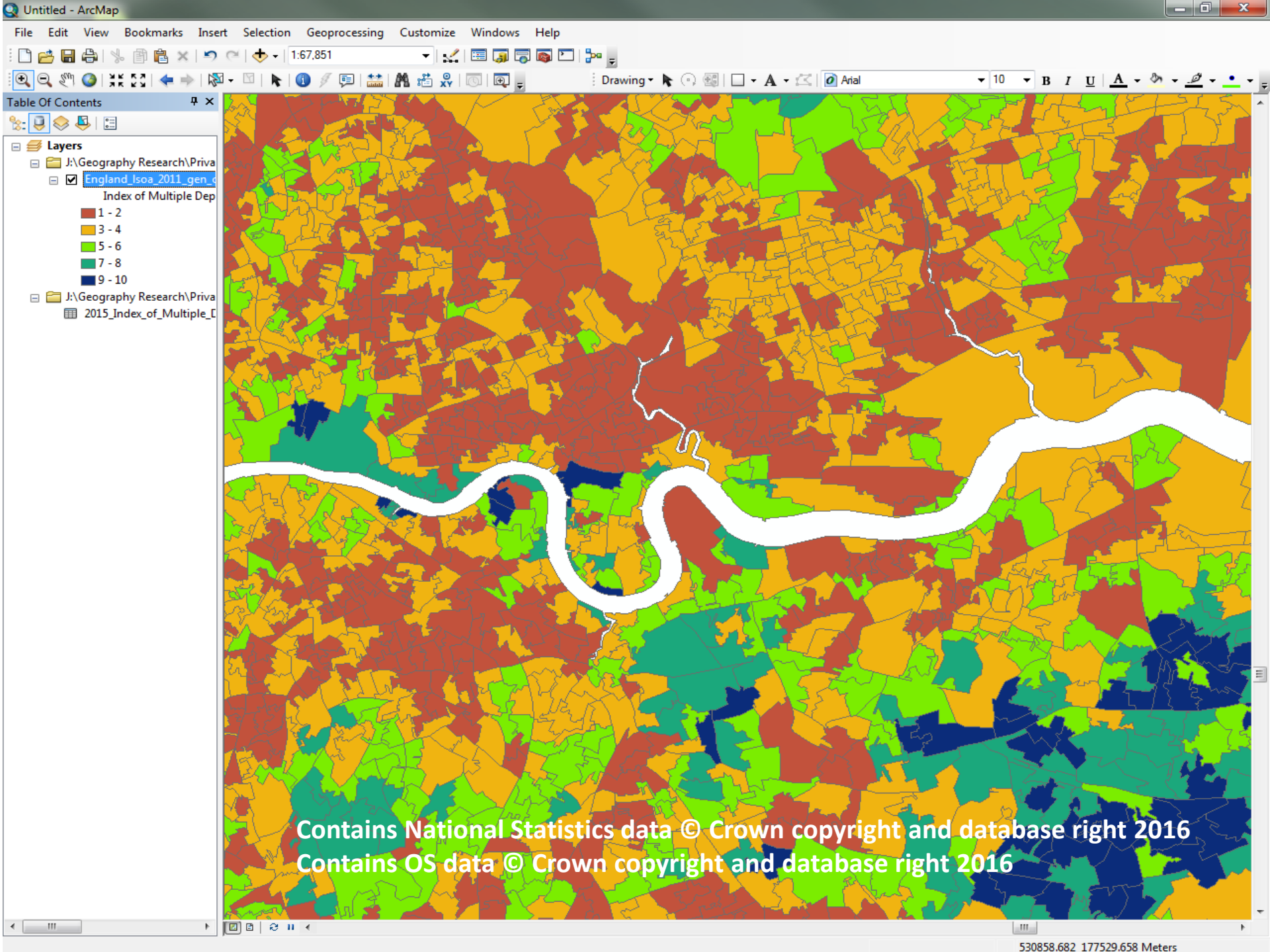
- Built from synthetic unit postcode polygons, constrained within ward and parish boundaries
- Minimum thresholds of 100 persons and 40 households
- Target size of 125 households
- Shape controlled by an accessibility statistic
- Attempt not to combine urban with rural postcodes
- Homogeneity controlled by Intra-Area Correlation statistic using tenure and dwelling type characteristics

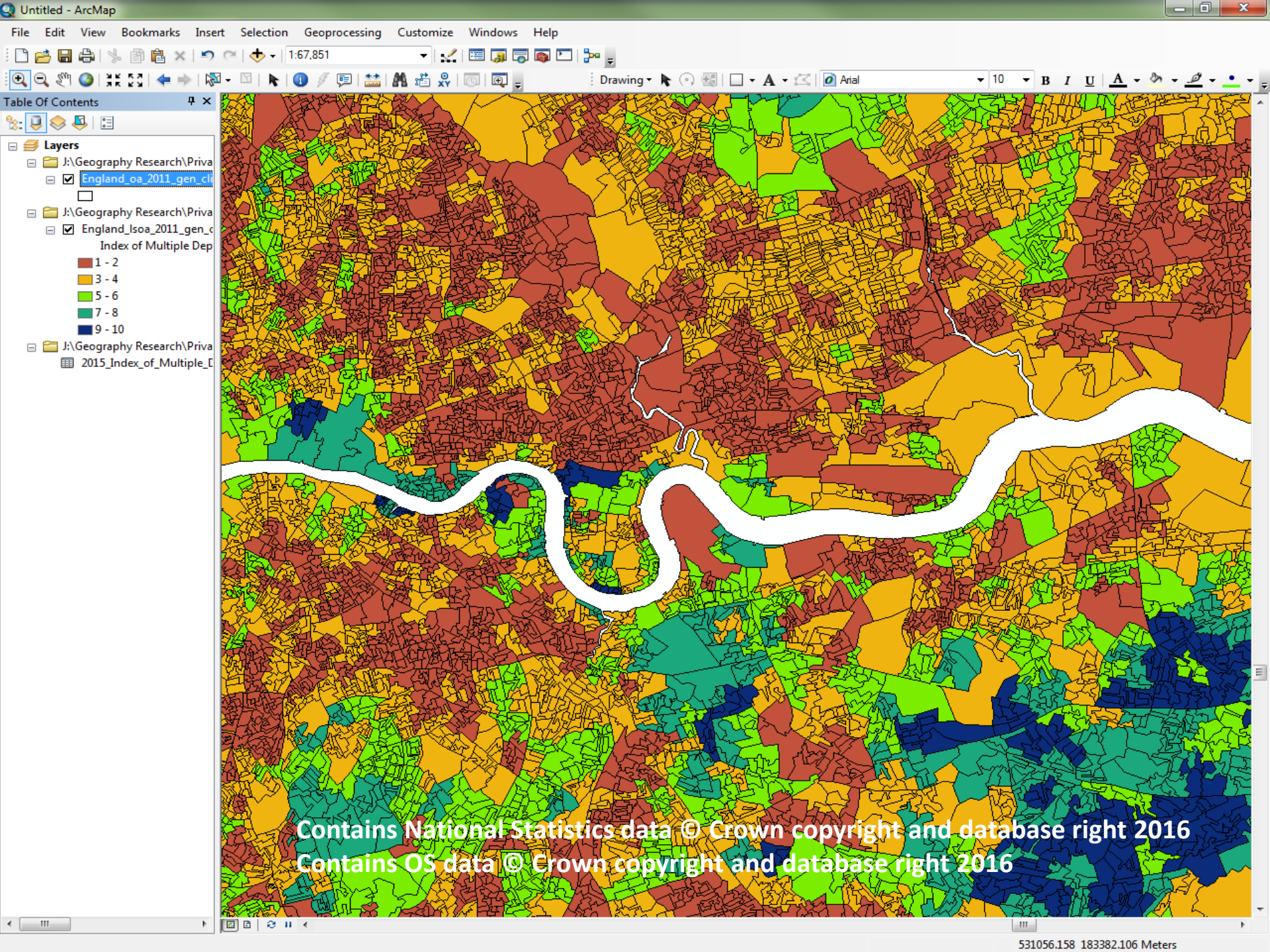
2011 Census Output Areas

- Updated set of 2001 Output Areas (2.6% changed)
- Review and manual adjustment of unsatisfactory 2001 zones, LA boundary changes
- Subdivision of zones with population over 625, or aggregation of any below threshold
- Automated zone design re-applied for subdivisions
- No longer constrained to wards and parishes
- N=171,372 in England and Wales

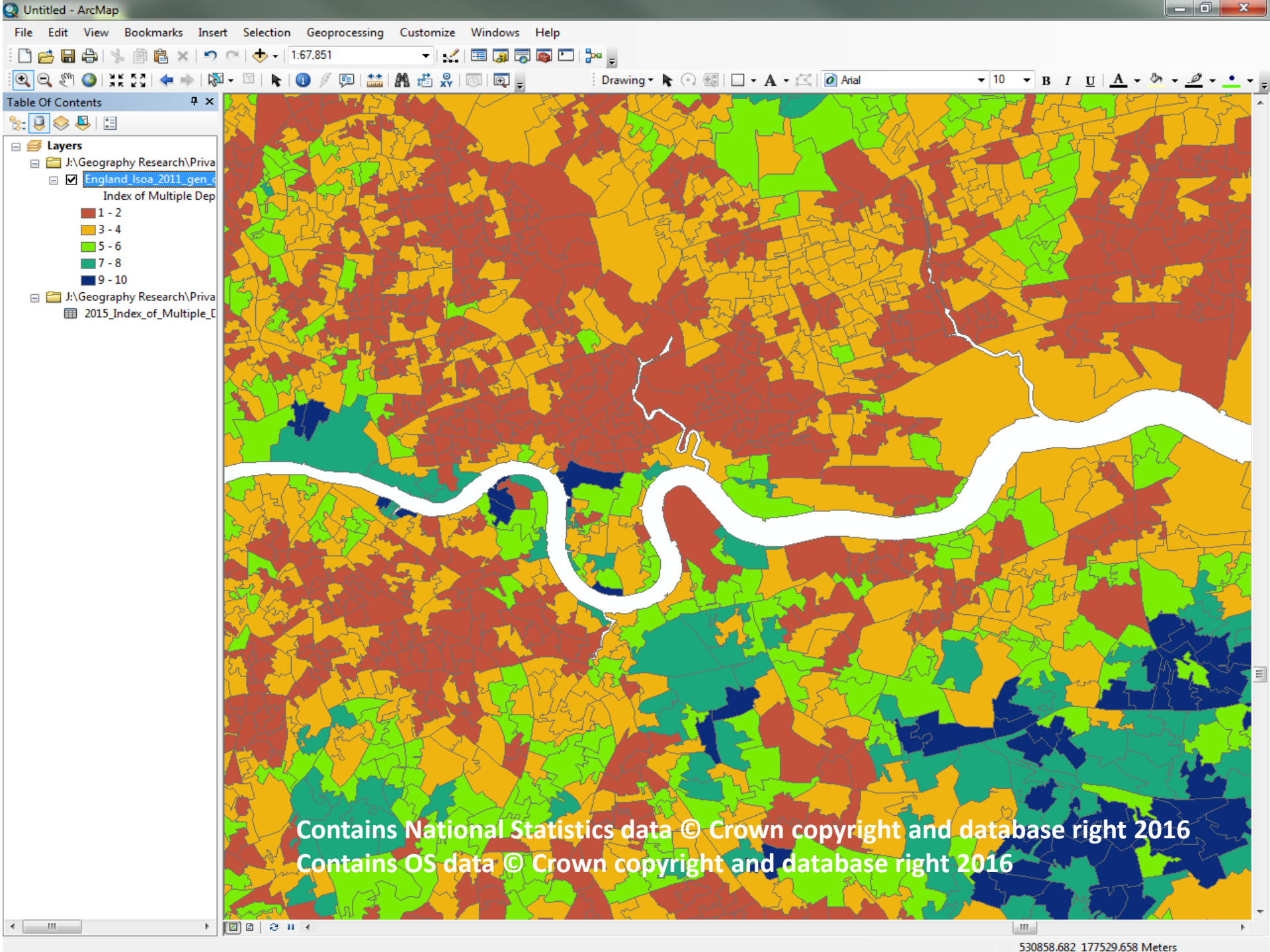
Lower Layer Super Output Areas

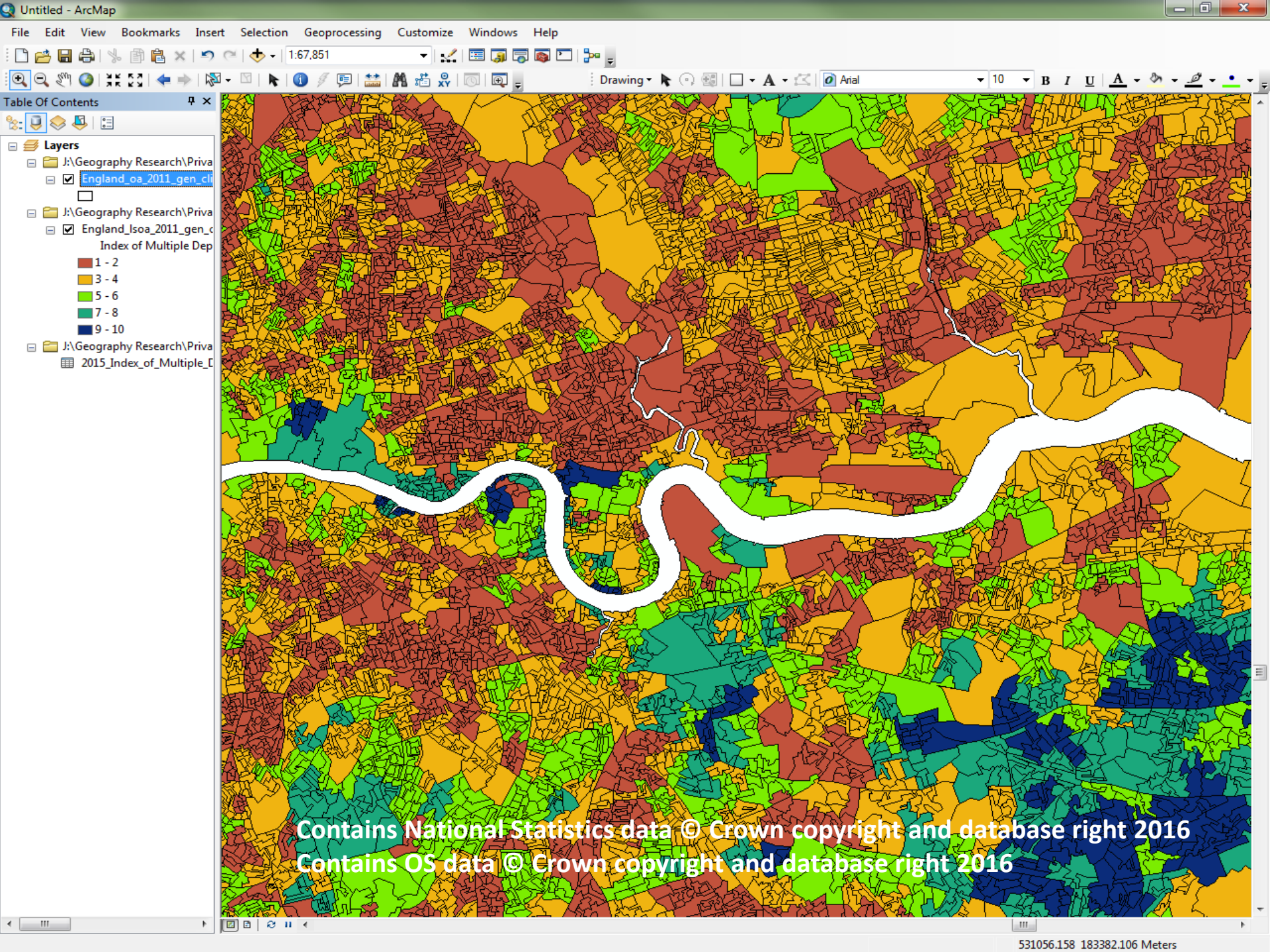
- Initially created for Indices of Deprivation 2004
- Thresholds of 1000 persons and 400 households
- 2001 Census Output Areas used as building blocks for re-run of zone design
- Constrained within Local Authority boundaries
- Original mean 1500 population, typically 5 output areas combined
- N=34,753 in England and Wales
- Recalculated for 2011, N=32,844





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2011 Workplace Zones

- Entirely new units for reporting of workplace statistics from 2011 Census
- Minimum 200 workers and 3 workplace postcodes
- May be the same as 2011 Output Areas, subdivisions or aggregations depending on workplace population density
- Subdivisions based on automated zone design using postcode polygons as building blocks
- N=53,578 in England and Wales



DataShine COWZ-EW

Classification Of Workplace Zones for England/Wales, 2011 Census data.

Land

Labels

Postcode:

Go

Retail

Top jobs

Metro suburbs

Suburban services

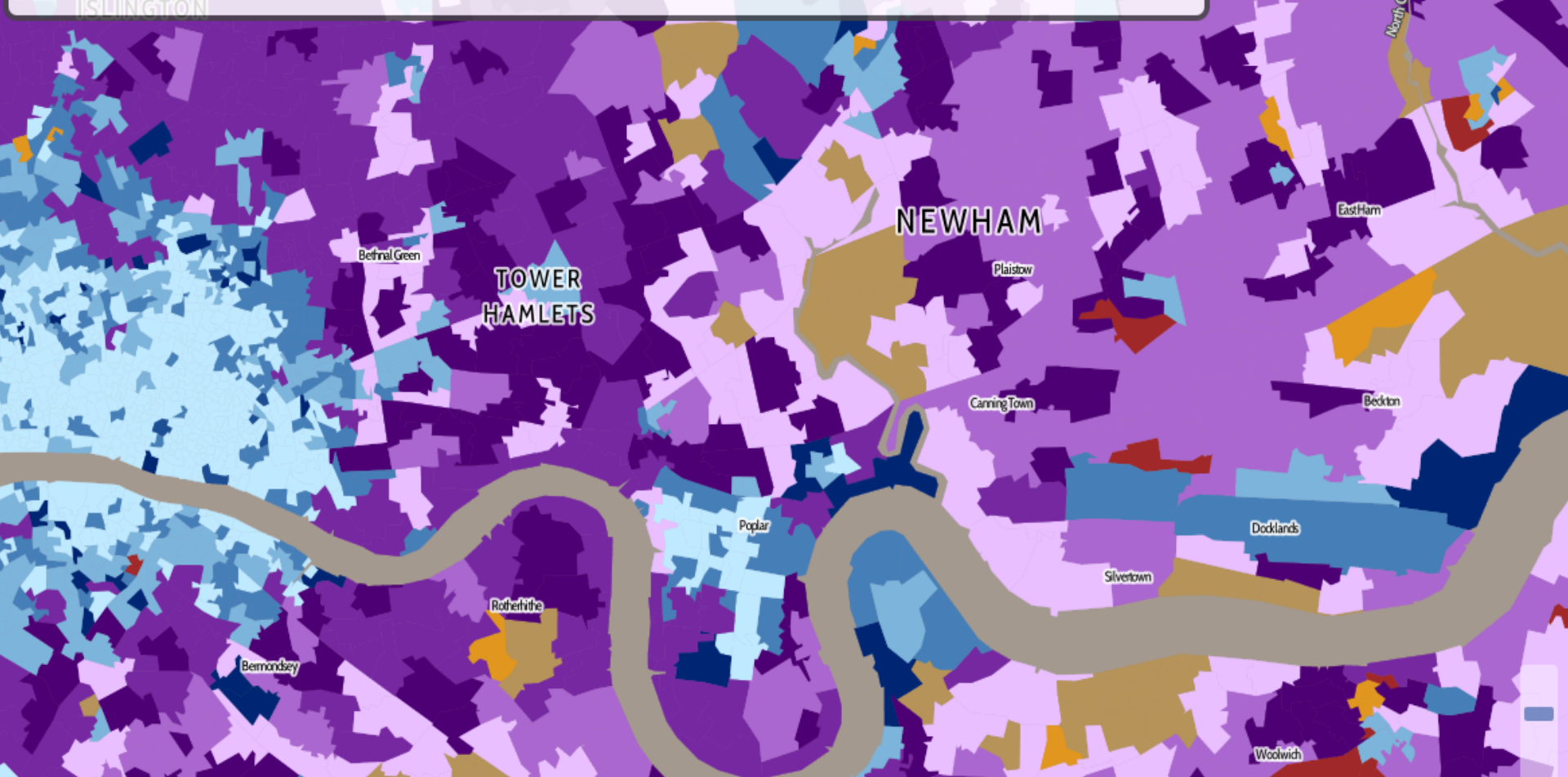
Manufacturing and distribution

Rural

Servants of society

Important note: Classifications are an average across the local area, rather than for individual houses, therefore the colour coding on a building is not necessarily indicative of that building.

[More information about COWZ-EW.](#)



Metro suburbs

Cosmopolitan metro suburban mix

E09000025

Area Code

Classification Code

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Mapping from <http://cowz-ew.datashine.org.uk/>

2011 OAC

An general classification based on home population. [Switch to it.](#)

Summary

- Automated zone design used for all census zones in England and Wales 2001 and 2011
- Users of the small area census data need to understand the implications of the zone design
 - Relationship to other geographical units
 - Placement of boundaries
 - Sizes and shapes of zones
 - Thresholds, size ranges, social homogeneity
- Researchers should consider likely dependence of results on specific zone design decisions

For more information please visit
www.ncrm.ac.uk

