Provisional results of Norfolk Visitor Surveys 2015-2016

Chris Panter & Durwyn Liley
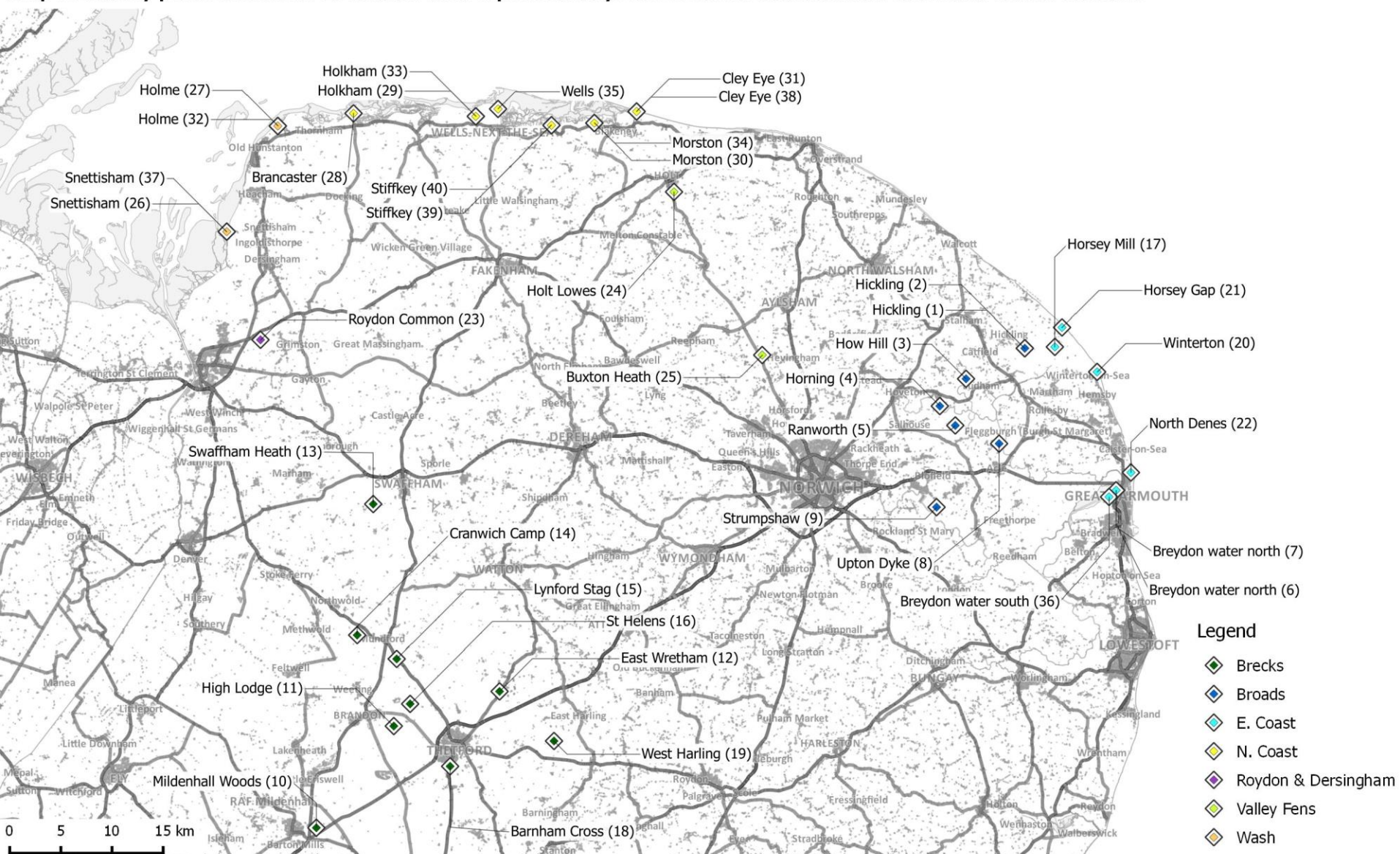
Footprint Ecology

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Norfolk Visitor Surveys 2015-2016

- Strategic level understanding of visitor use of European sites across whole county.

- Current visitor levels, and profile of visitors, e.g. activities being undertaken to help inform the impact on landscapes/wildlife.

- Understanding the 'catchment'/'draw' of sites and how these relate to future population levels.

- ->appropriate mitigation to facilitate suitable new development .

Visitor Survey methodology

- Interviews with a random sample of visitors on site.

- 40 survey points – 2 days, 16 hours at each location.

- Access points to sites where recreation and wildlife coincide.

- Timing of surveys to coincide with designated interest – may/may not coincide with peak of people.

- Includes some seasonal repeats.

- Range of questions for visitor profiling – activity, frequency of visit, reasons for visiting.

- Routes.

- Home postcode.

- Tally count of people entering and leaving sites.

Map 3: Survey point locations. Locations with repeat surveys are ordered with summer first then winter second.

Holme (27)
Holme (32)
Holkham (33)
Holkham (29)
Wells (35)
Cley Eye (31)
Cley Eye (38)
Snettisham (37)
Snettisham (26)
Brancaster (28)
Stiffkey (40)
Stiffkey (39)
Morston (34)
Morston (30)
Horsey Mill (17)
Holt Lowes (24)
Hickling (2)
Hickling (1)
Horsey Gap (21)
Roydon Common (23)
How Hill (3)
Winterton (20)
Buxton Heath (25)
Horning (4)
Swaffham Heath (13)
Ranworth (5)
North Denes (22)
Cranwich Camp (14)
Strumpshaw (9)
Breydon water north (7)
Upton Dyke (8)
Breydon water north (6)
Lynford Stag (15)
Breydon water south (36)
St Helens (16)
East Wretham (12)
High Lodge (11)
West Harling (19)
Mildenhall Woods (10)
Barnham Cross (18)

0 5 10 15 km

Legend

◇ Brecks
◇ Broads
◇ E. Coast
◇ N. Coast
◇ Roydon & Dersingham
◇ Valley Fens
◇ Wash

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Results of the visitor survey

Tally counts:

- 6 k groups were recorded entering or leaving sites -> 14 k adults, 2 k minors and 3 k dogs.

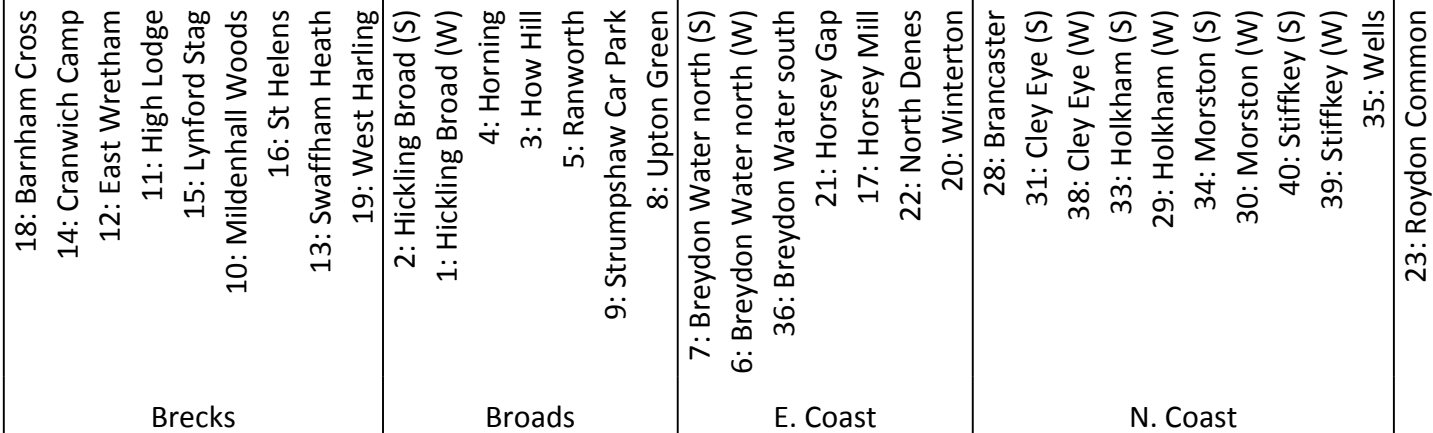- But variable between survey points and areas.
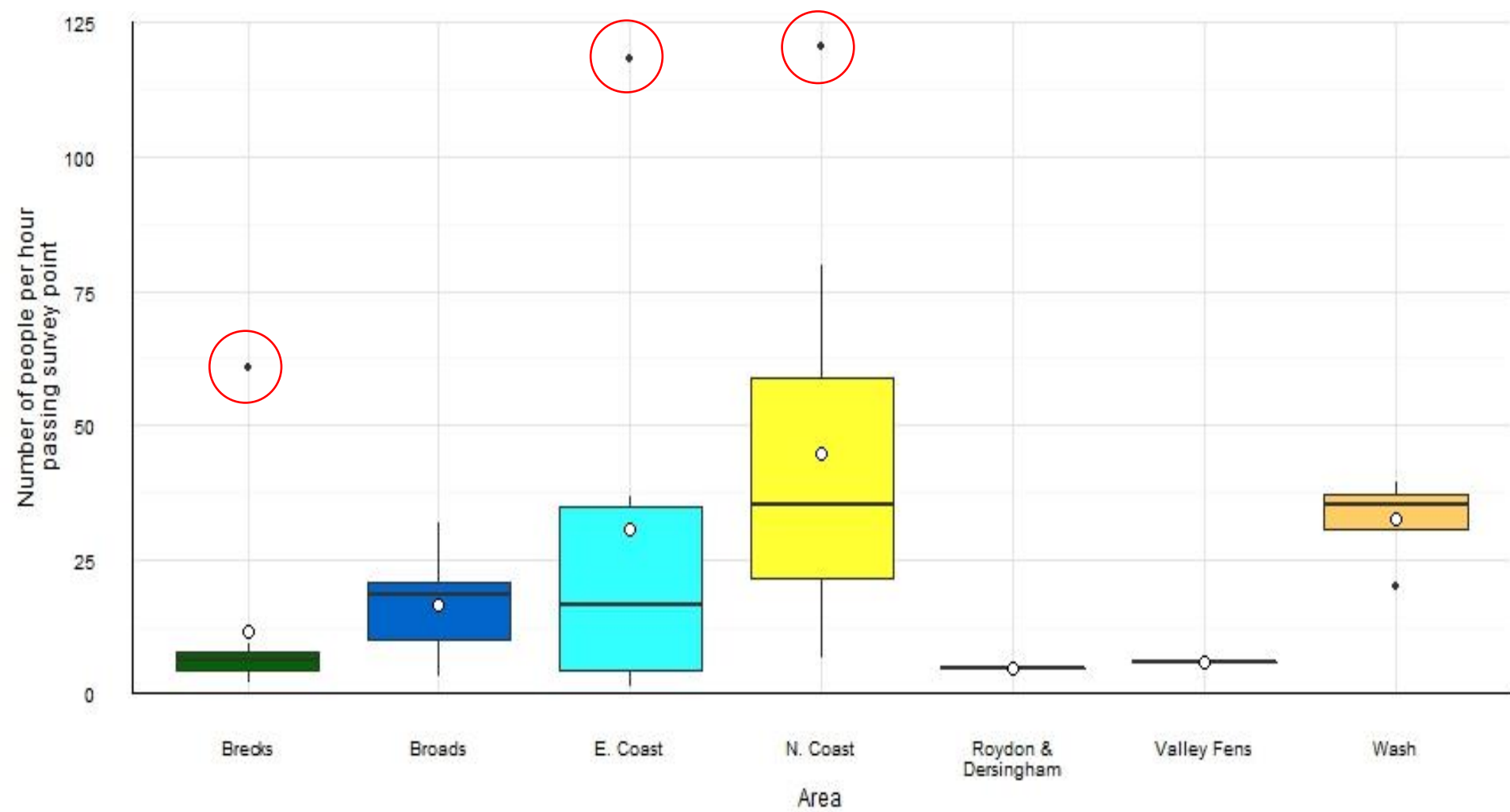
Y-axis: Number of people/dogs

Legend: ■ Total adults ■ Total minors ■ Total dogs

Brecks: 18: Barnham Cross, 14: Cranwich Camp, 12: East Wretham, 11: High Lodge, 15: Lynford Stag, 10: Mildenhall Woods, 16: St Helens, 13: Swaffham Heath, 19: West Harling

Broads: 2: Hickling Broad (S), 1: Hickling Broad (W), 4: Horning, 3: How Hill, 5: Ranworth, 9: Strumpshaw Car Park, 8: Upton Green

E. Coast: 7: Breydon Water north (S), 6: Breydon Water north (W), 36: Breydon Water south, 21: Horsey Gap, 17: Horsey Mill, 22: North Denes, 20: Winterton

N. Coast: 28: Brancaster, 31: Cley Eye (S), 38: Cley Eye (W), 33: Holkham (S), 29: Holkham (W), 34: Morston (S), 30: Morston (W), 40: Stiffkey (S), 39: Stiffkey (W), 35: Wells

23: Roydon Common

Use of tally data

- Highest numbers were recorded at Holkham and Horsey Gap -> c.1,900 people recorded in survey ~ 120 people per hour.

- Lowest: total of 22 people at Breydon Water winter survey. ~ 1.4 people per hour.

- Identify sites with most and least current pressures purely in terms of footfall.

  -> High visitors = pressure? High profile sites can be well managed to lessen impact.

Similarities between locations

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- Using only the tally data group sizes

- Clustering
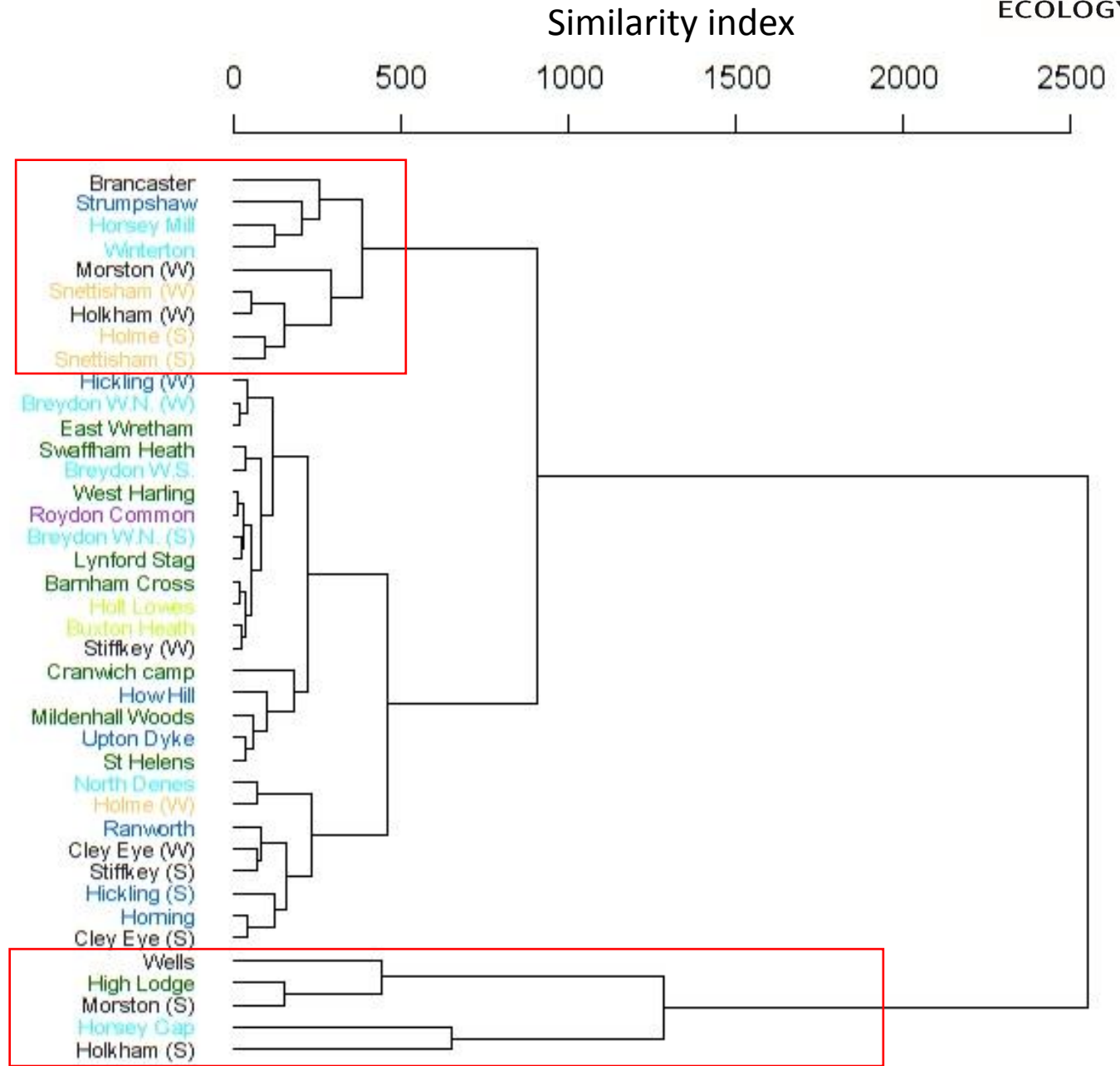
Interviews

- ~1,300 interviews conducted.

- Separate those on holiday and those from home – important for local housing increases.

- Holiday-makers accounted for nearly half of interviewees at the North Coast and Broads.

Range of activities

Range of activities
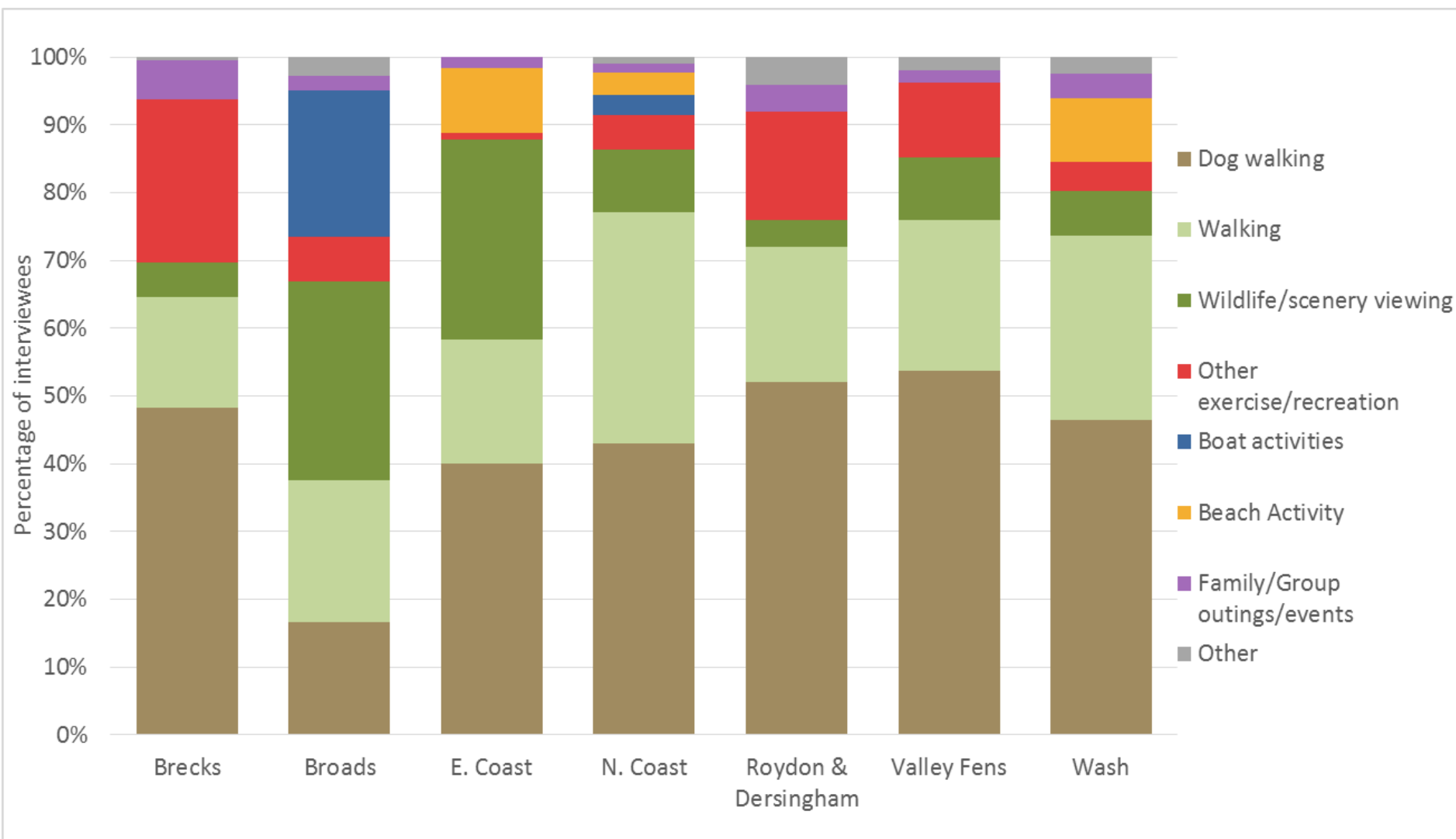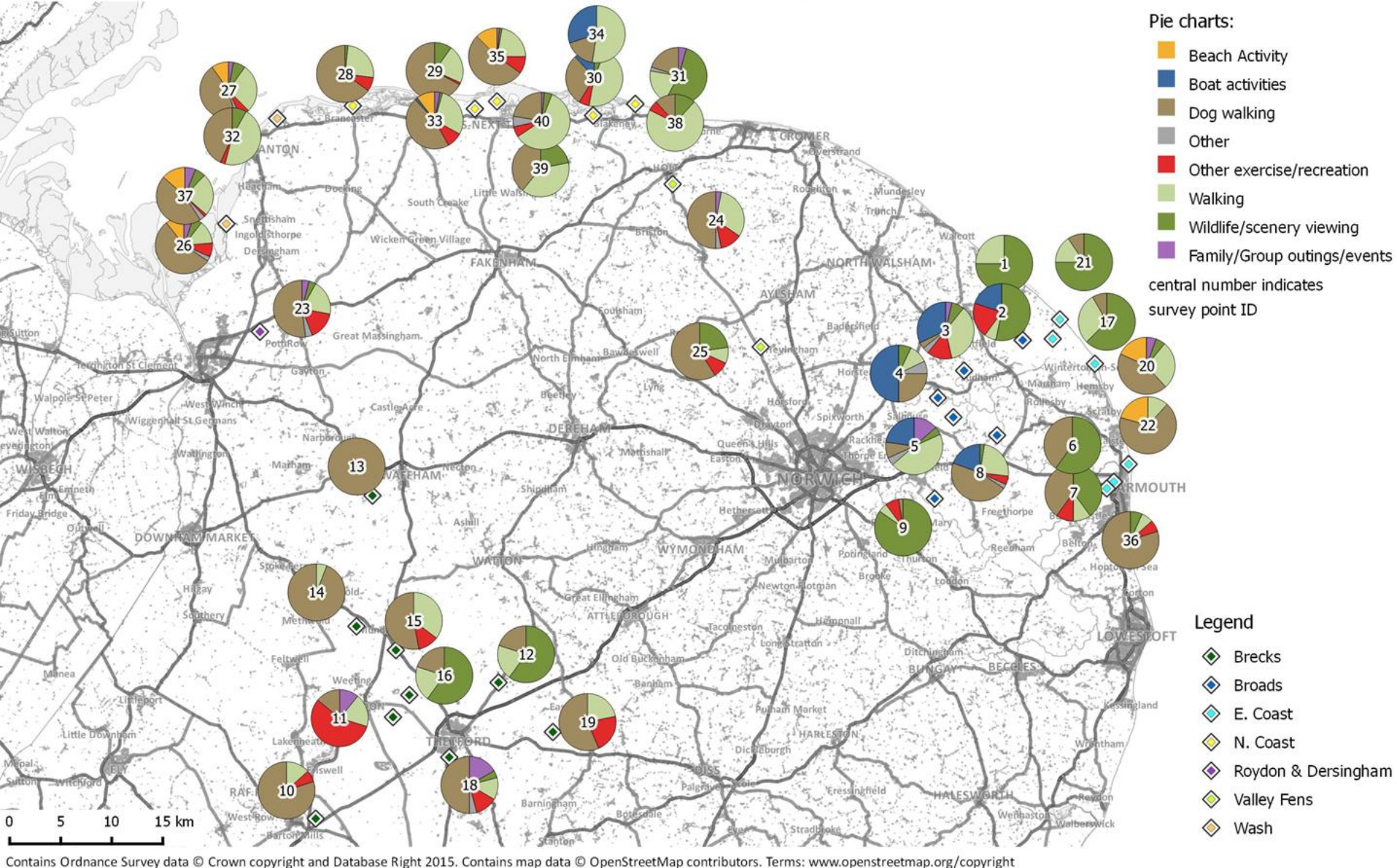
Why? • Some activities have greater impacts at certain sites -> implications for management

Other important questions

Visit duration:

- The Broads c. 33% of interviewees visiting for more than 4 hours in the Broads.

- At Roydon c. 33% of interviewees visiting for less than 30 minutes.

- Visiting duration less, but may or may not result in greater impact.

- Will also depend on where is the impact….
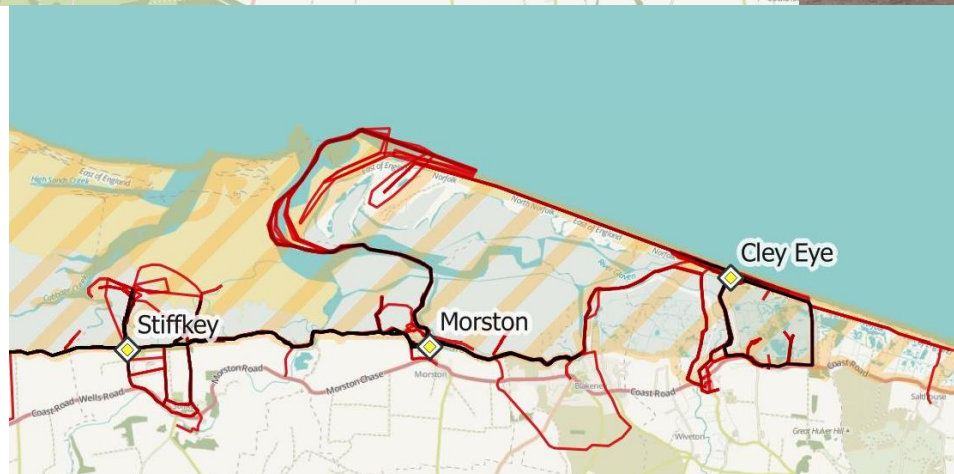
Visitor origins

- Home postcodes of interviewees.

- Interviewees on holiday only.

Legend

- Brecks
- Broads
- E. Coast
- N. Coast
- Roydon & Dersingham
- Valley Fens
- Wash
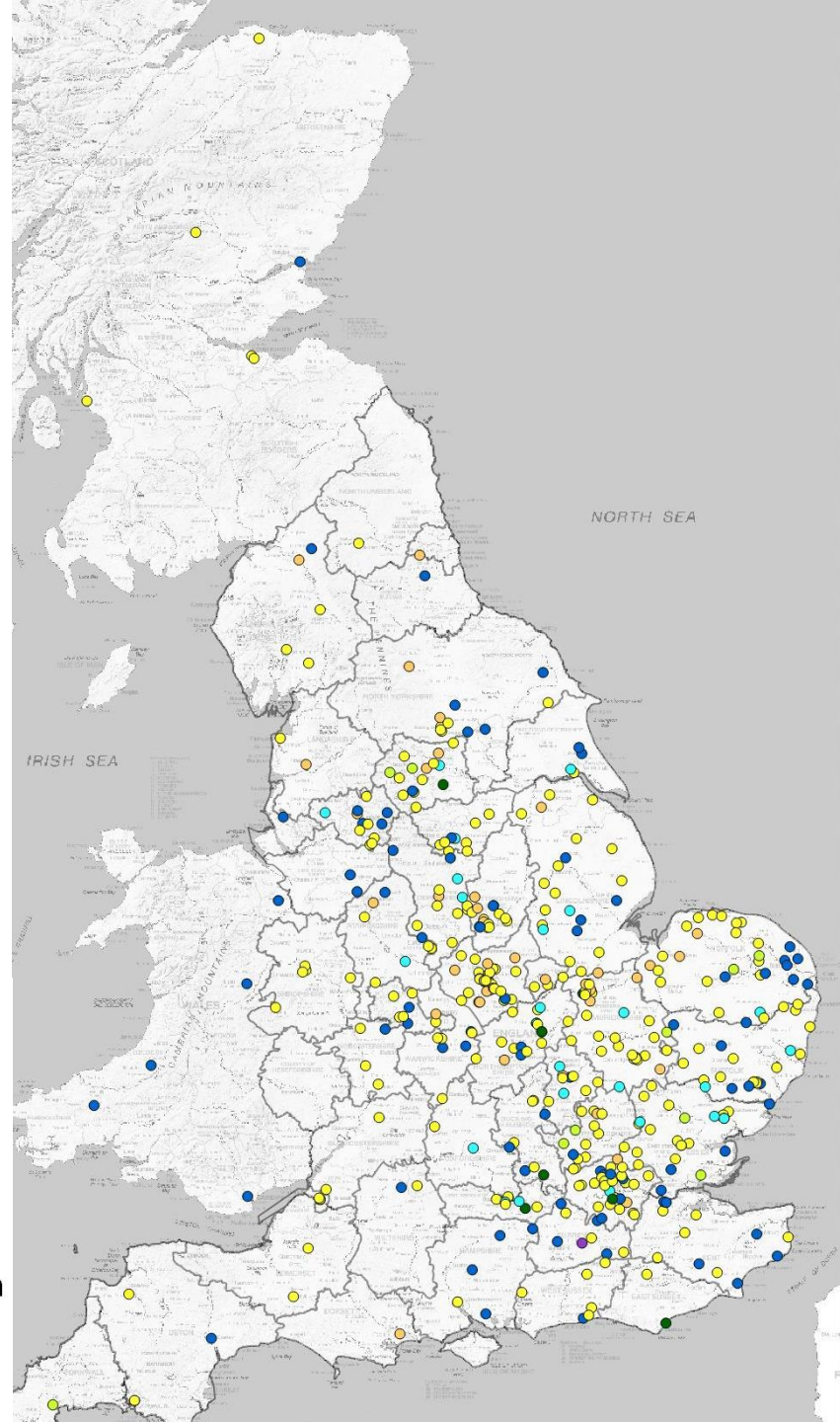
Visitor origins – all interviewees [1312]
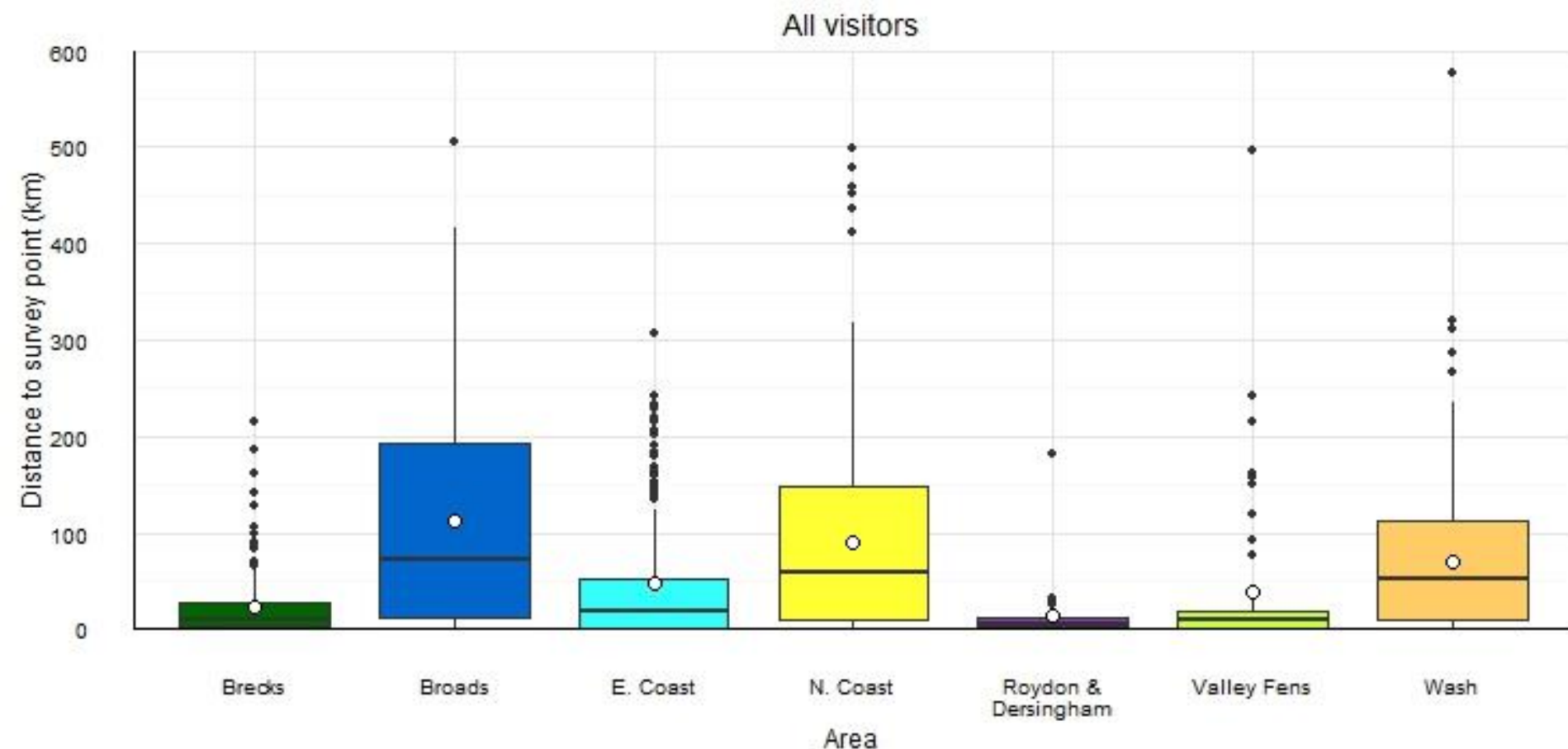
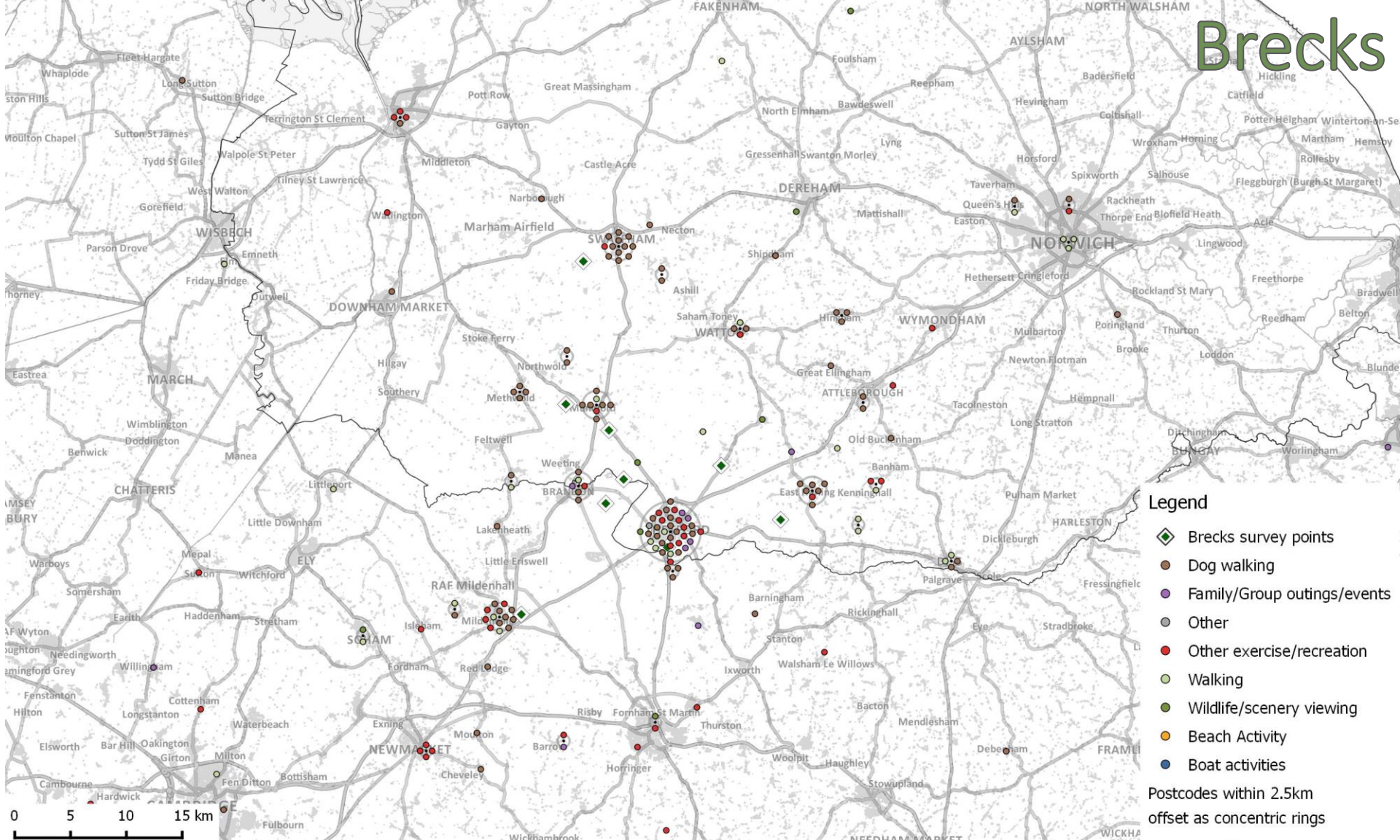- Only half of interviewees lived in Norfolk.

Visitors from home only.

Legend
- Brecks
- Broads
- E. Coast
- N. Coast
- Roydon & Dersingham
- Valley Fens
- Wash
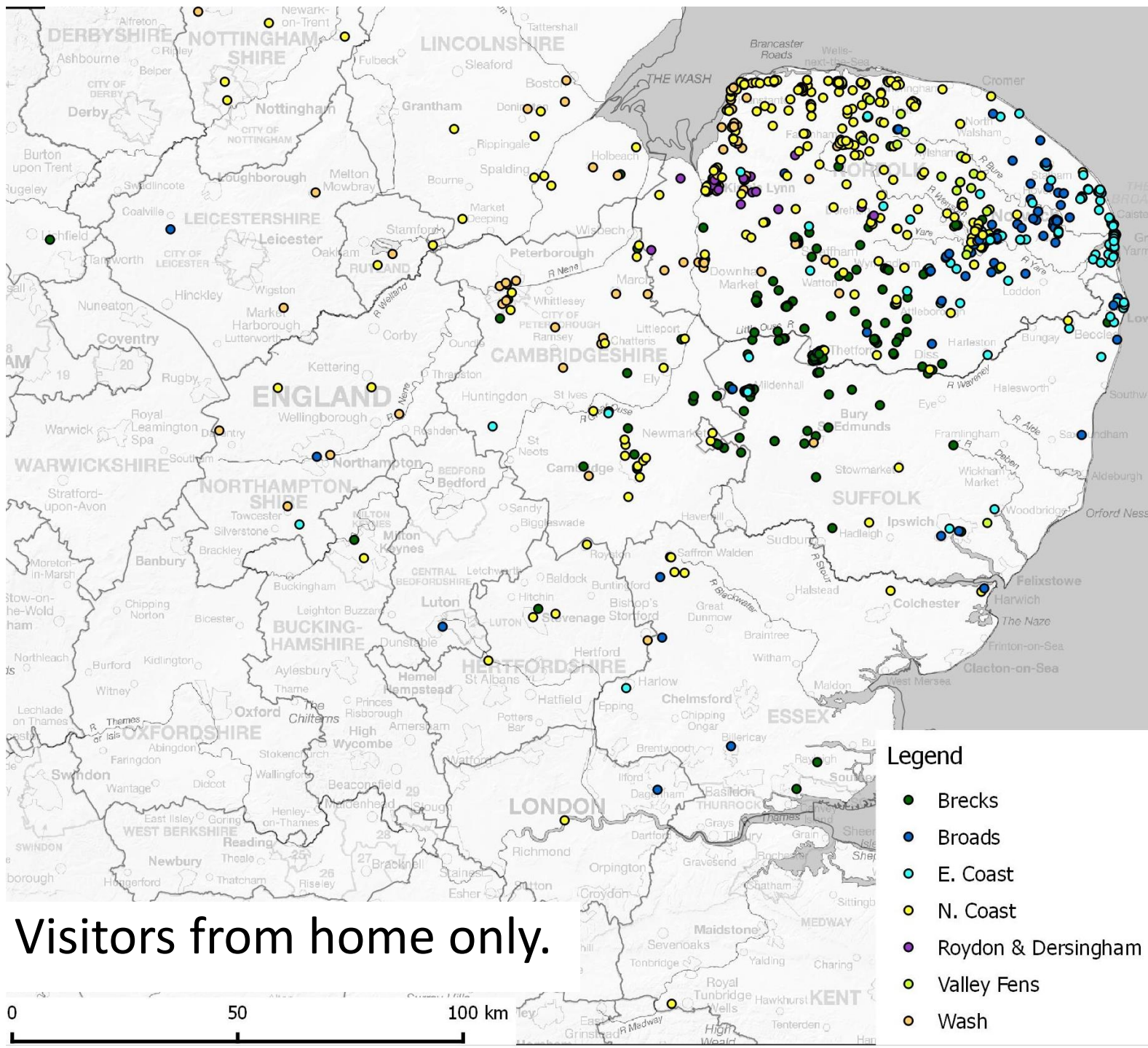
Visitor origins – from home [875]

Only visitors from home
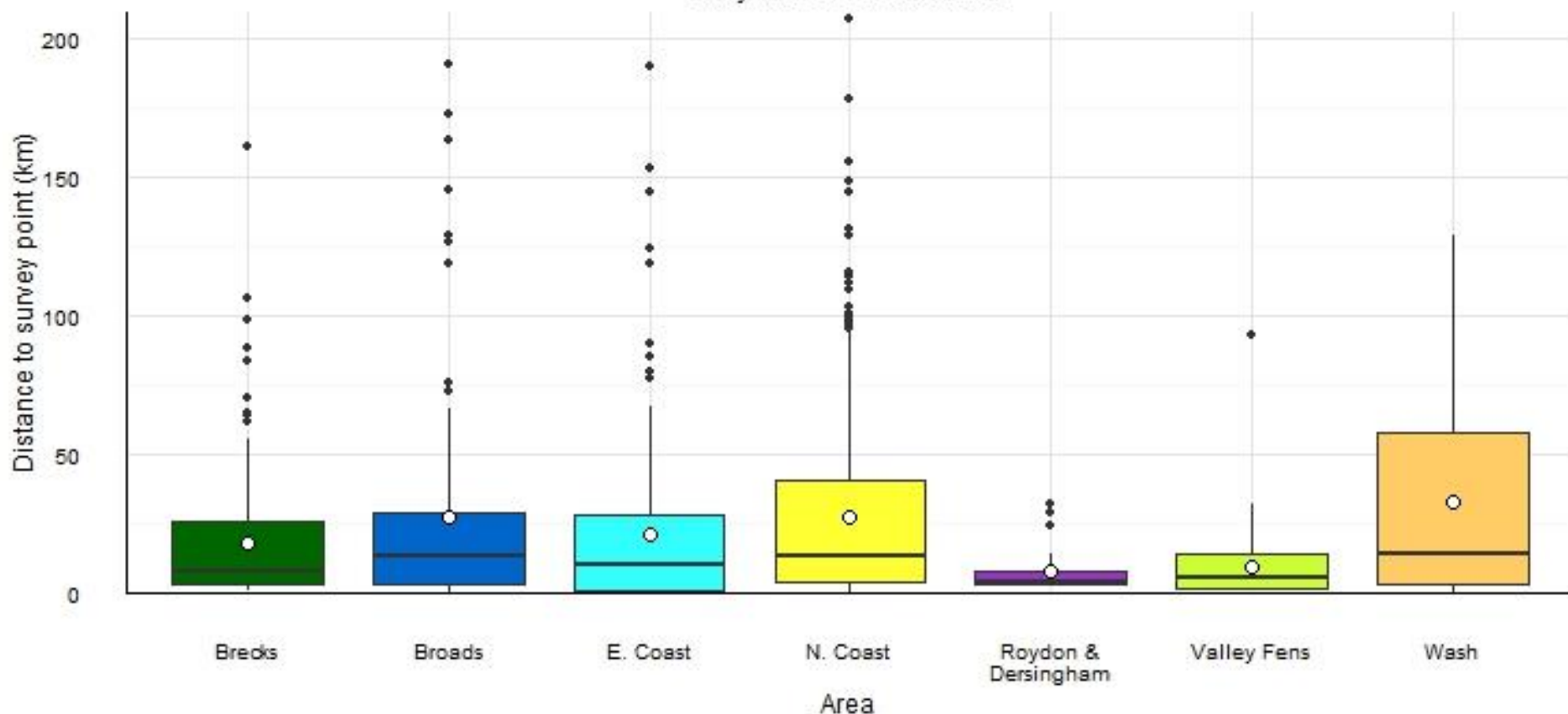
- Average linear distance was 24km.

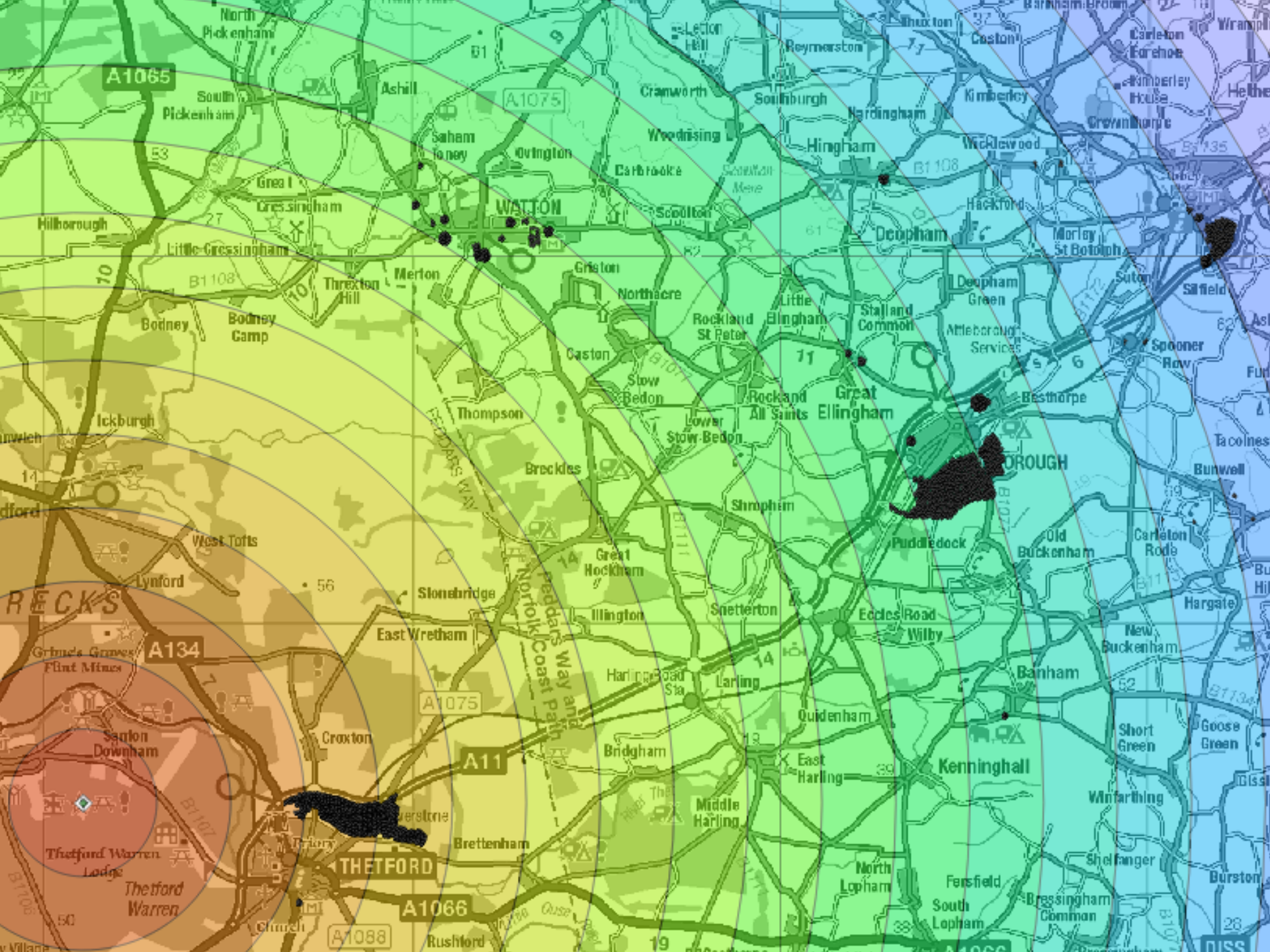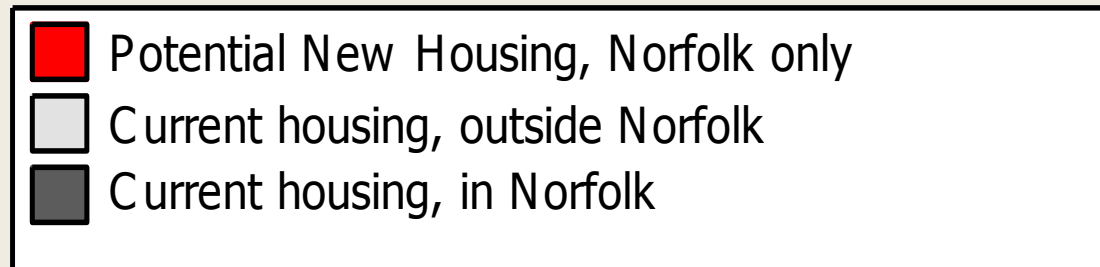- Median linear distance was 11 km (50% live within this radius).

Broads

Legend

◆ Broads survey points
● Dog walking
● Family/Group outings/events
● Other
● Other exercise/recreation
● Walking
● Wildlife/scenery viewing
● Beach Activity
● Boat activities

Postcodes within 2.5km
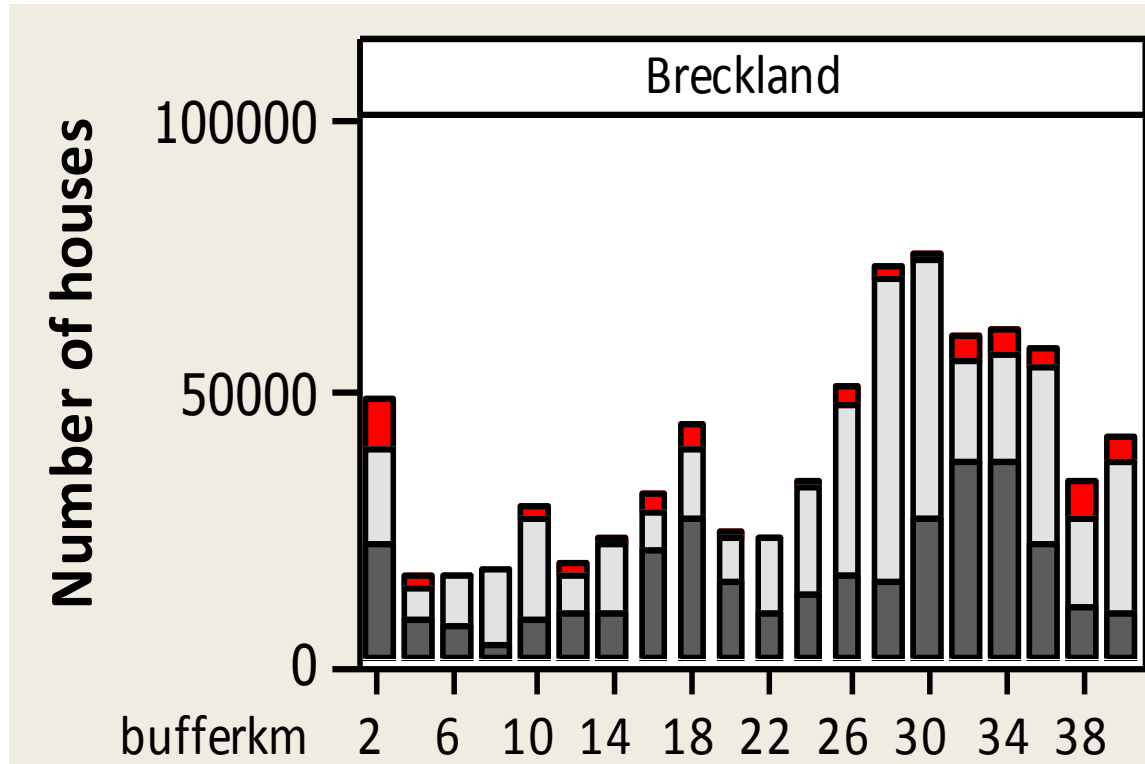offset as concentric rings

0   5   10   15 km

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Brecks

Legend

- ◇ **Brecks survey points**
- ● **Dog walking**
- ● **Family/Group outings/events**
- ● **Other**
- ● **Other exercise/recreation**
- ● **Walking**
- ● **Wildlife/scenery viewing**
- ● **Beach Activity**
- ● **Boat activities**

Postcodes within 2.5km
offset as concentric rings

0   5   10   15 km

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Future housing

- Using visitor data to consider future visitor pressures.

- <u>Currently</u>, 400 k residential properties in Norfolk.

- <u>Future</u> plan period, show potential of 66 k new dwellings -> 16% increase.

- We plot both to examine increases around each site.

Breckland

Number of houses — bufferkm: 2, 6, 10, 14, 18, 22, 26, 30, 34, 38

Legend:
- Potential New Housing, Norfolk only
- Current housing, outside Norfolk
- Current housing, in Norfolk

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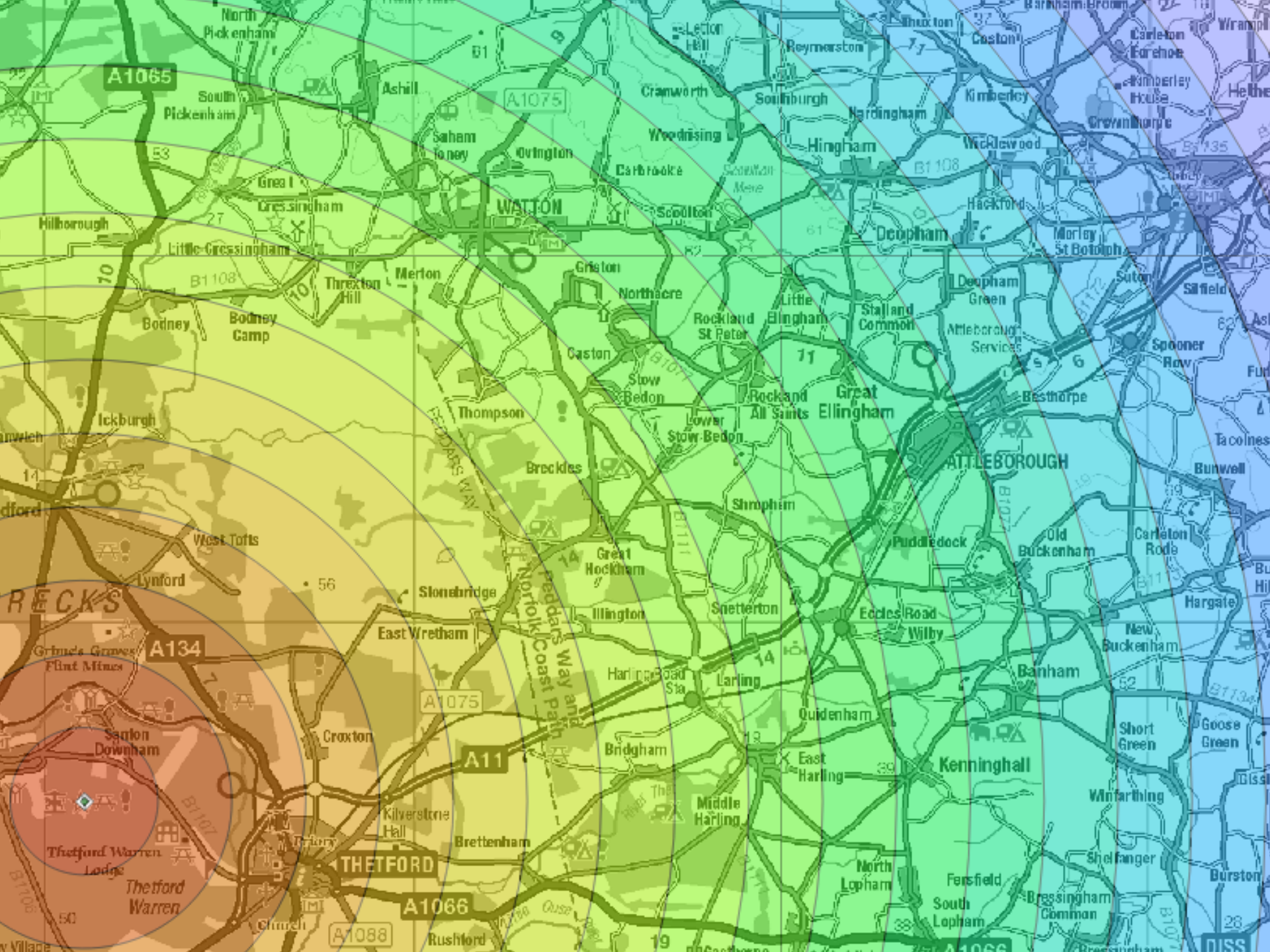
Future housing

- However, the 'catchment' or 'draw' of sites can be different.

- Visitor curves –> likelihood of visiting decreasing with increase distance away from site.
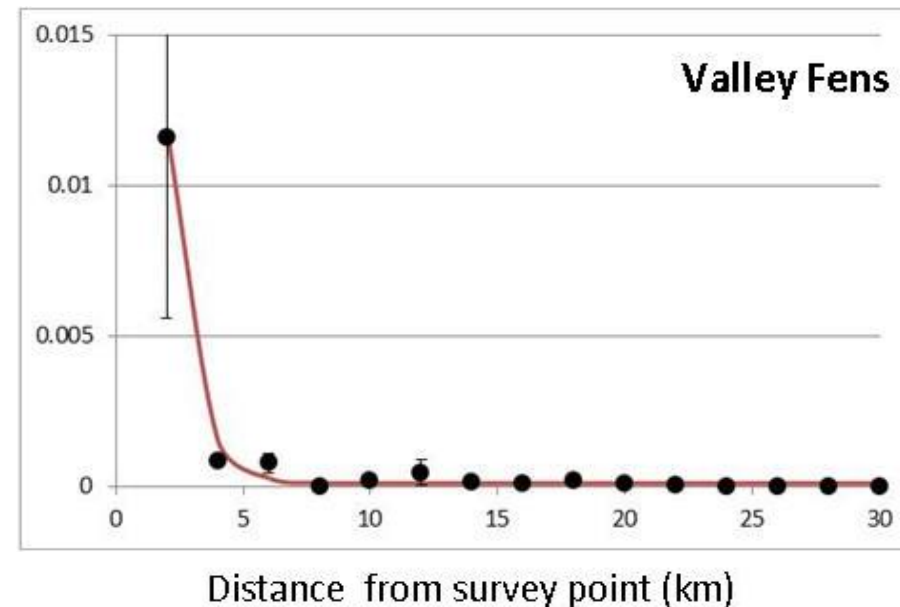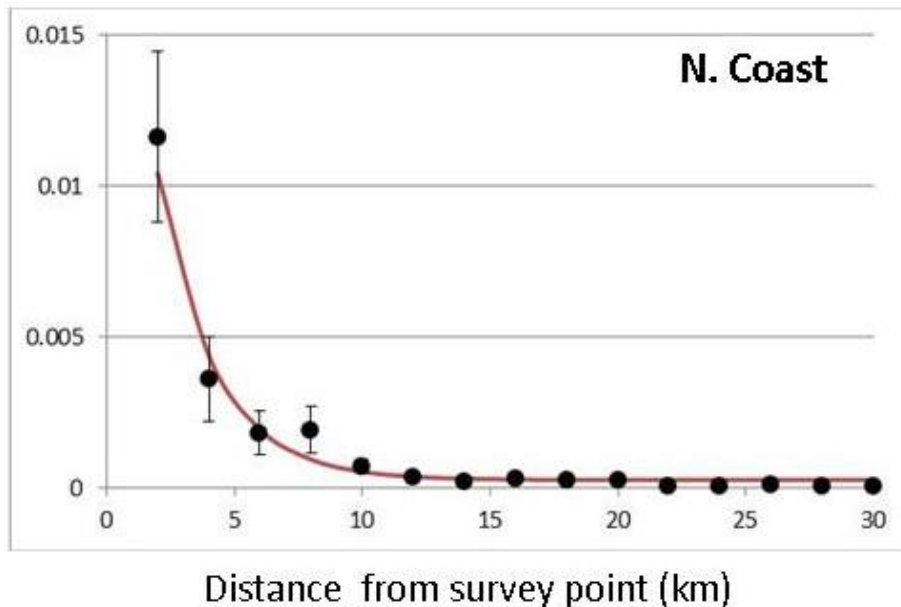
Future housing

- Include new housing in the curves.

- Which developments are likely to result in highest increases in visitors.

- 'Future interviewees' – 233, an increase of just under 14% -> overall housing increase 16%.
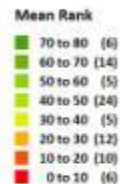
footprint ECOLOGY

Future housing

- Future interviewees by authority.
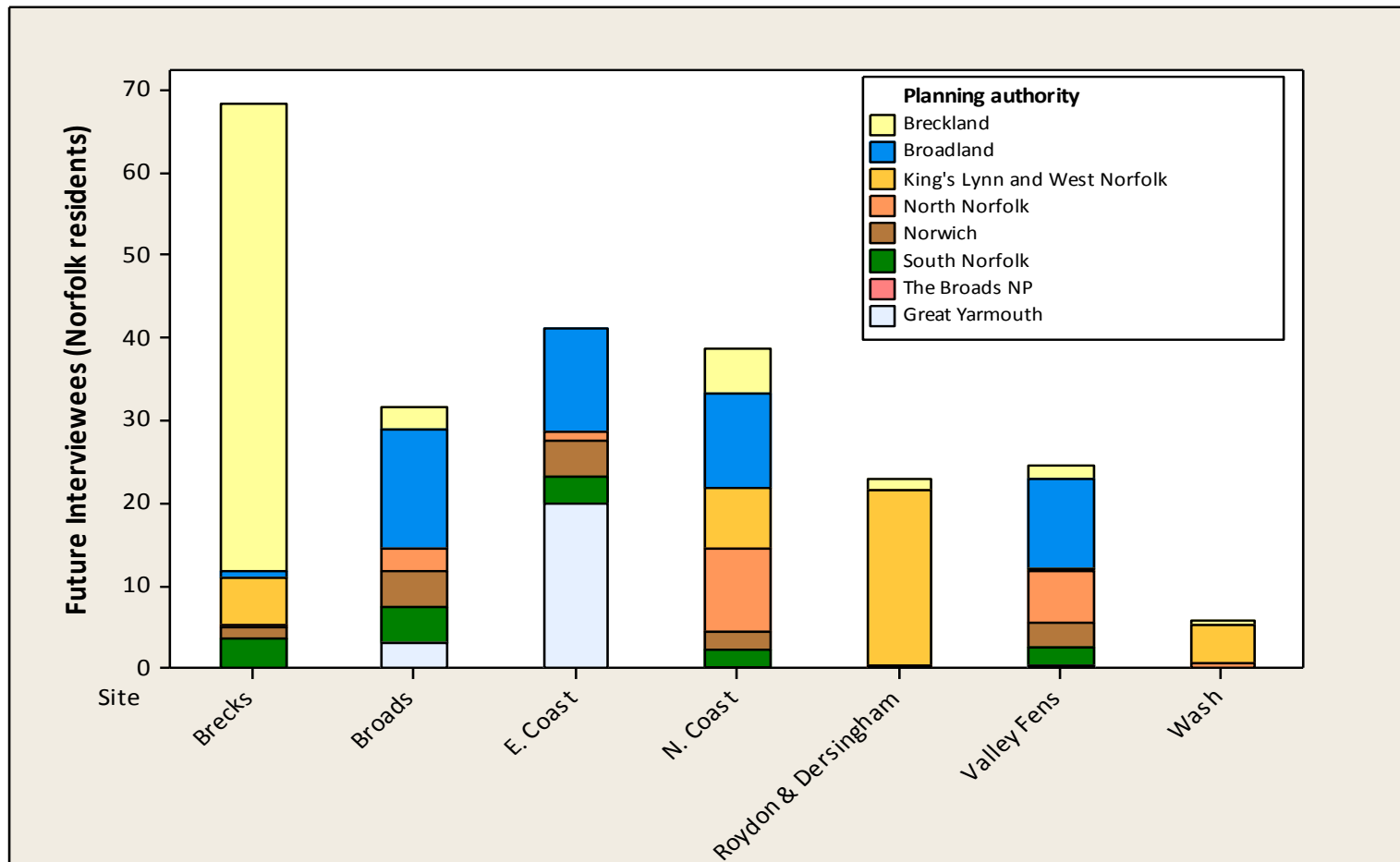
Results in context

Looking across European sites

Map shows mean ranks based on data relating to houses per ha SPA and house density; different buffers out to 5km

High ranking sites tend to be coastal/estuaries and heaths

| SPA_Name	Mean_Rar
Lee Valley	1.5
Portsmouth Harbour	4
South West London Waterbodies	4.75
Northumbria Coast	6.88
Benfleet and Southend Marshes	8.63
Mersey Estuary	9.5
Thanet Coast & Sandwich Bay	11.75
Teesmouth & Cleveland Coast	13.63
Great Yarmouth North Denes	14.38
Solent & Southampton Water	15.13
Poole Harbour	16.38
Upper Nene Valley Gravel Pits	16.75
Thames Basin Heaths	17
Avon Valley	18
Exe Estuary	18.25
Chichester and Langstone Harbours	18.88
Pagham Harbour	20
Tamar Estuaries Complex	20.38
Marazion Marsh	21.5
Crouch & Roach Estuaries (Mid-Essex C	22.25

Mean Rank
- 70 to 80 (6)
- 60 to 70 (14)
- 50 to 60 (5)
- 40 to 50 (24)
- 30 to 40 (5)
- 20 to 30 (12)
- 10 to 20 (10)
- 0 to 10 (6)

English SPAs, shading reflecting mean rank for different urban variables

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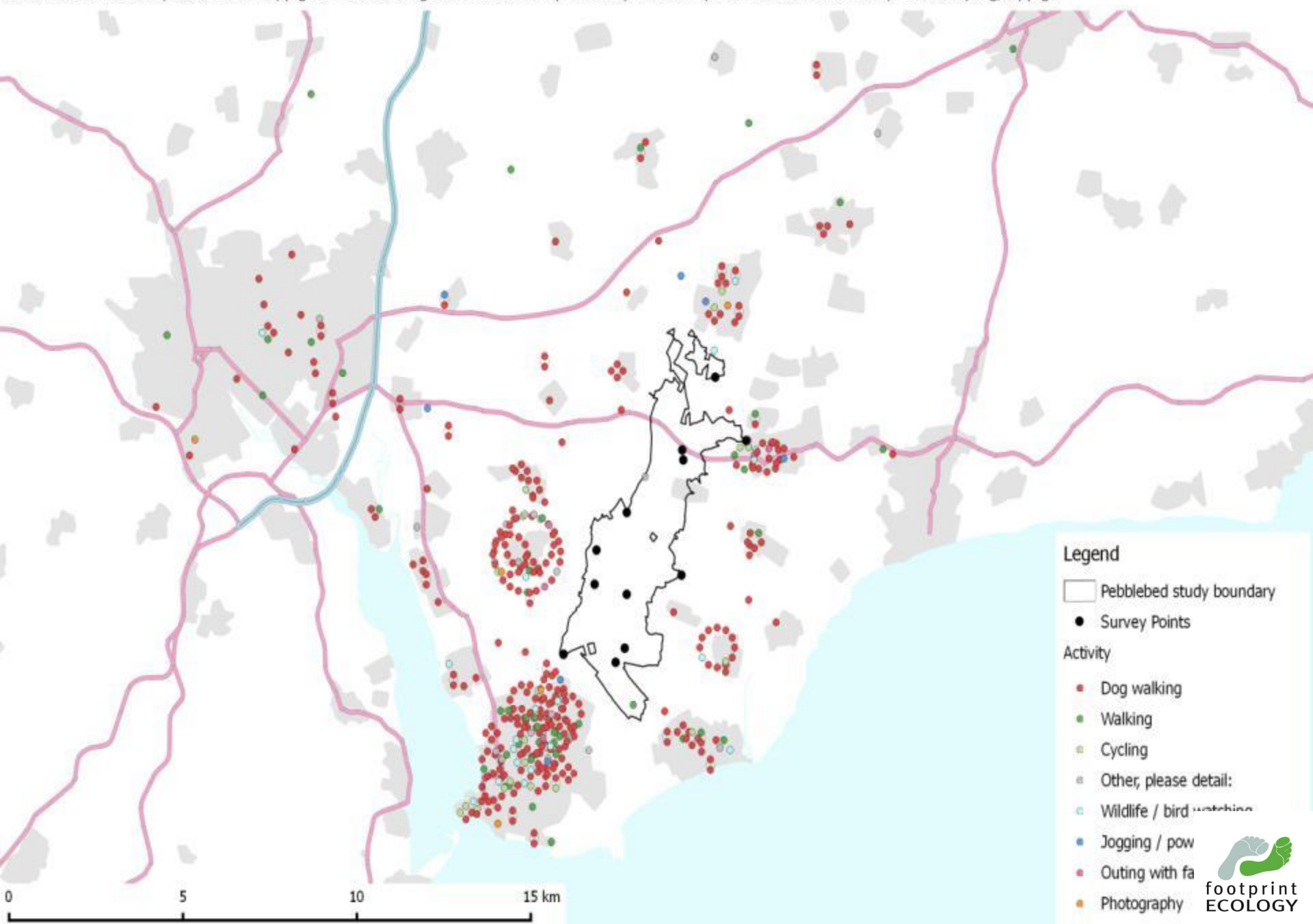| SPA	Houses within 5km % change 2003-2015
Wealden Heaths Phase II	8
New Forest	10
East Devon Heaths	10
Thames Basin Heaths	10
Dorset Heathlands	10
Ashdown Forest	12
Sandlings	13
Breckland	17

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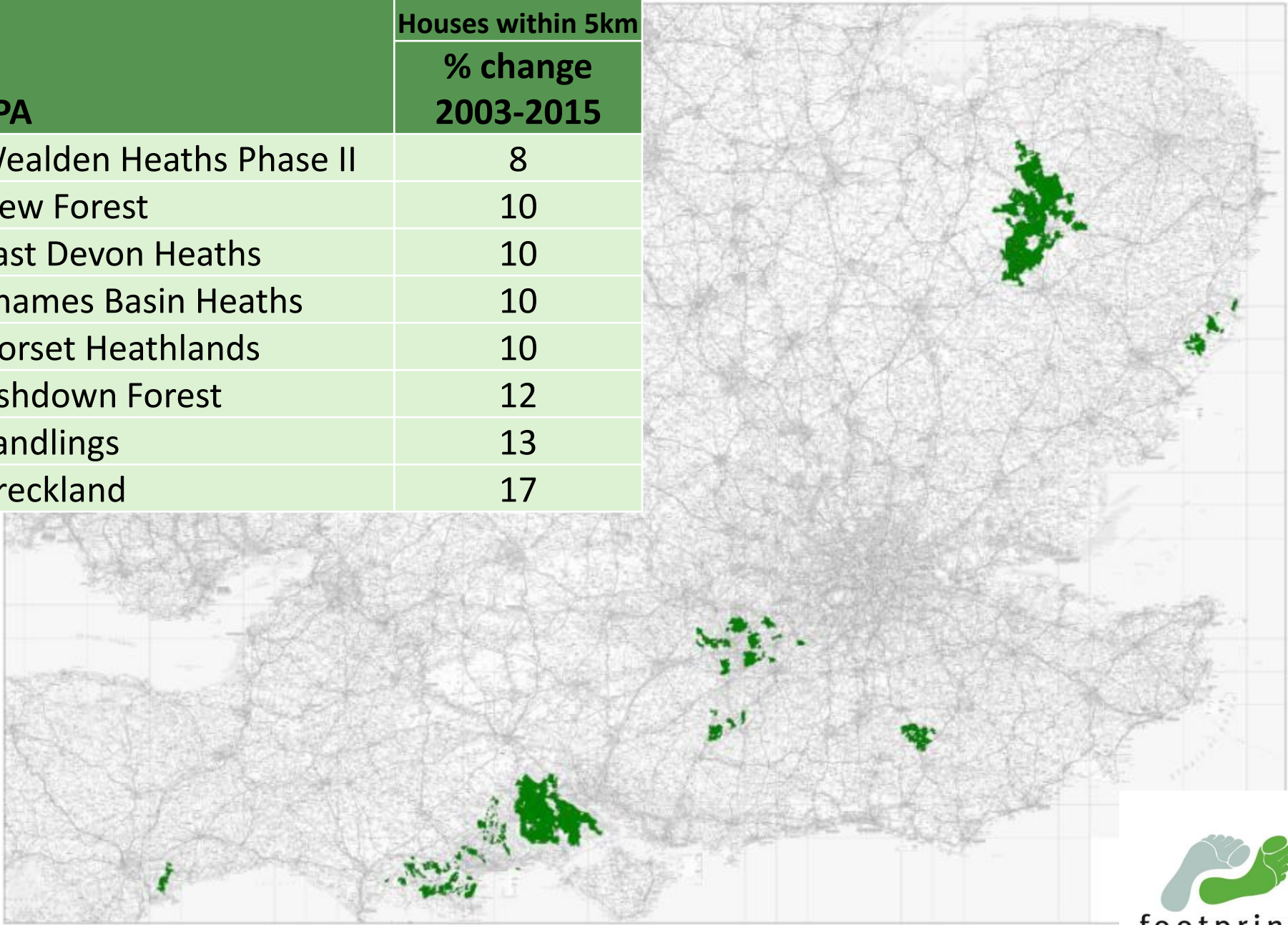
Distribution of postcodes in the south-west.
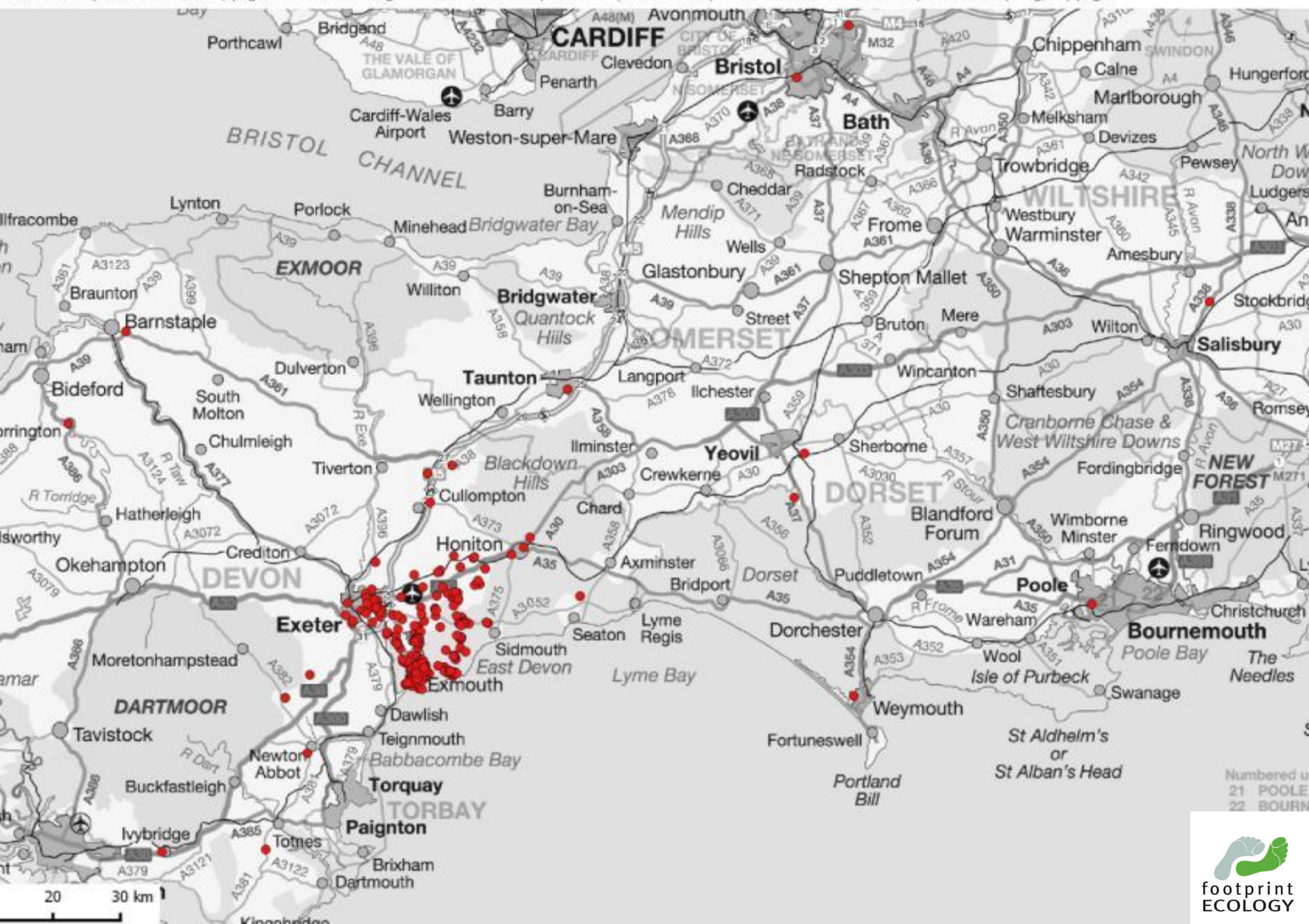
Map 10: The home postcodes of interviewees, labelled by activity. Overlapping postcodes are displaced in circles for visualisation.
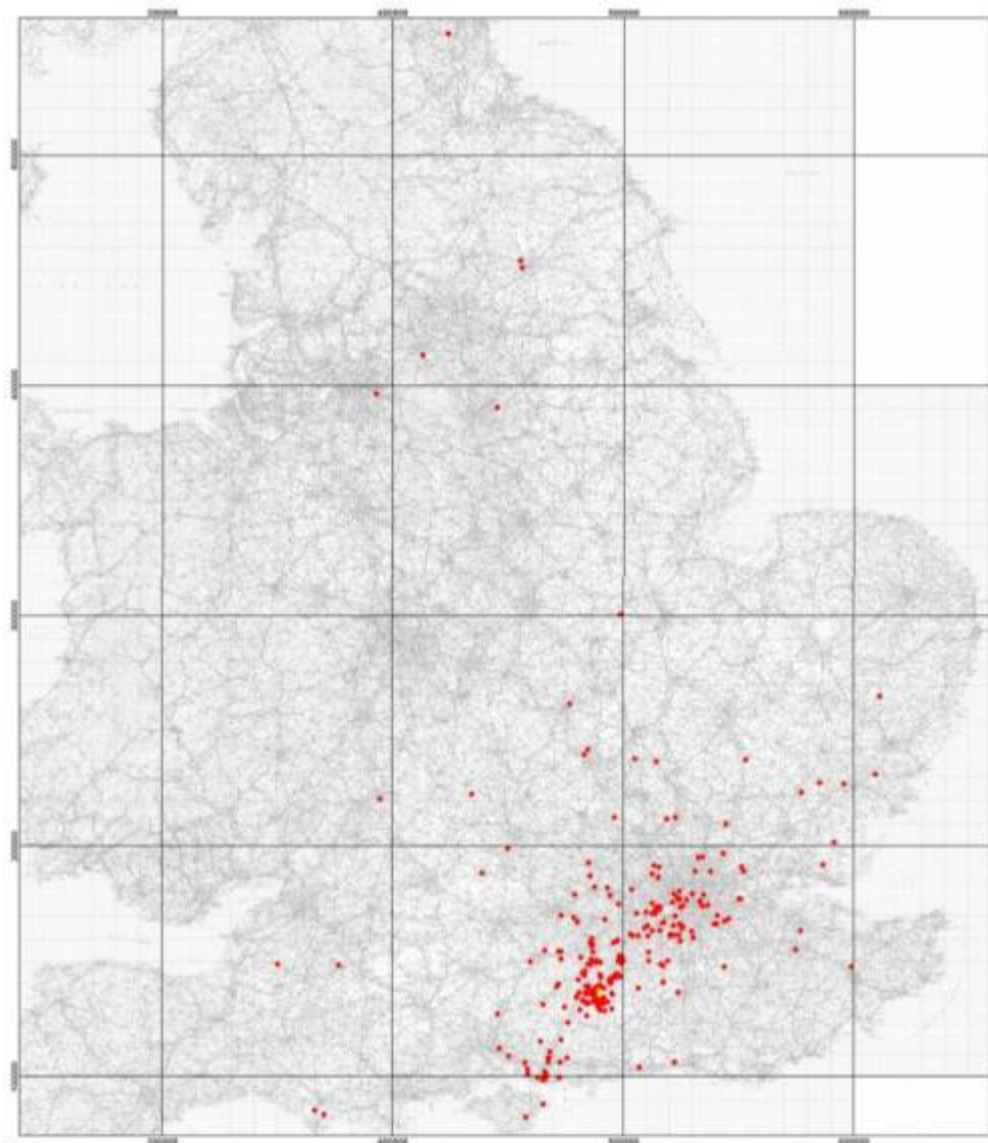
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Legend

☐ Pebblebed study boundary

● Survey Points

Activity

● Dog walking

● Walking

○ Cycling

○ Other, please detail:

○ Wildlife / bird watching

● Jogging / pow

● Outing with fa

● Photography

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0   5   10   15 km

Map 2a: Home postcode of all interviewees

Visitor flow monitoring and analysis at Hindhead Common and the Devil's Punchbowl

Hindhead Common & Devil's Punchbowl

Interviewee home postcode

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4 January 2010

Scale 1:2200000

- Catchments specific to sites'

- Various factors such as attractiveness, facilities etc will influence how far people will travel
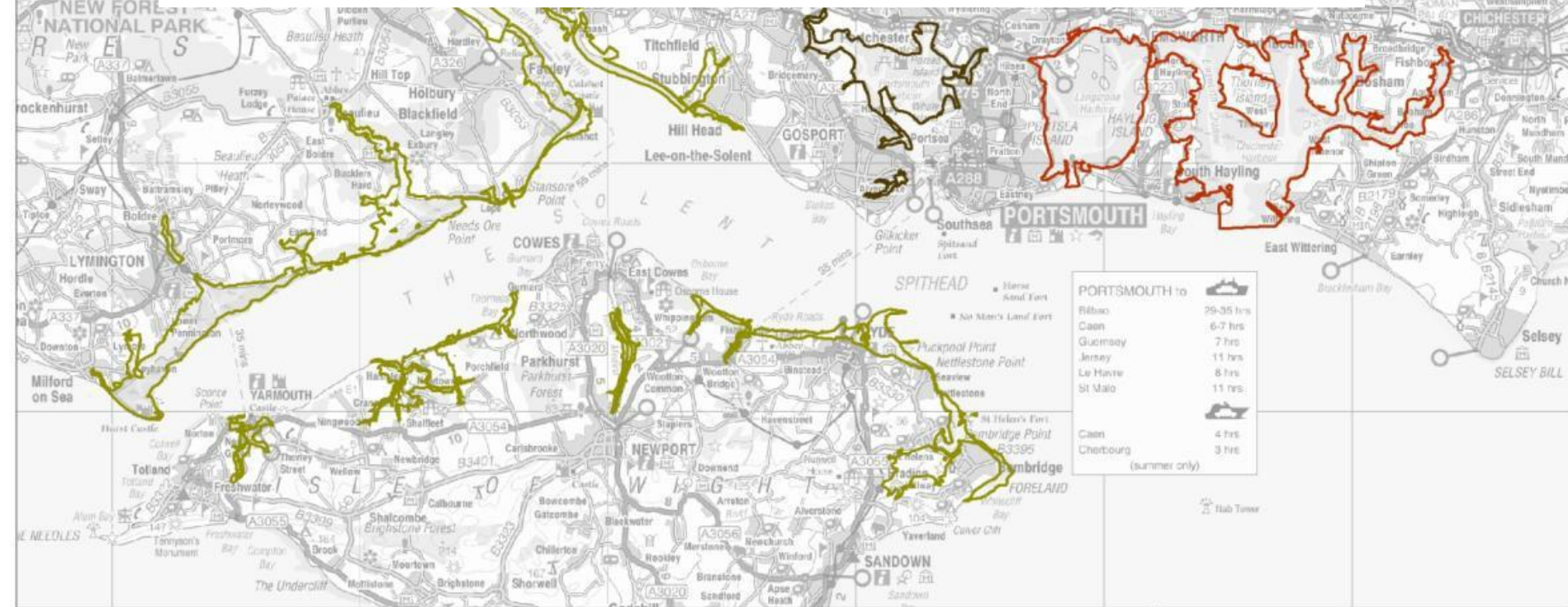
Questions

- What level of housing leads to impact?

- What evidence?

- Solutions?

Solent Disturbance & Mitigation Project

- Around 80,000 new dwellings current plan period
- 11 local authorities
- 3 SPAs (all coastal)

Map 1: SPA boundaries

Chichester and Langstone Harbours
Portsmouth Harbour
Solent & Southampton Water

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Evidence base for HRA work (2010-2014):

- Evidence base for HRA Initial review/scoping

- Visitor surveys

- Bird disturbance work

- Visitor & bird modelling work (2010-2014):

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Behavioural and applied research

Behavioural - understand how individual animals respond to changes in the environment
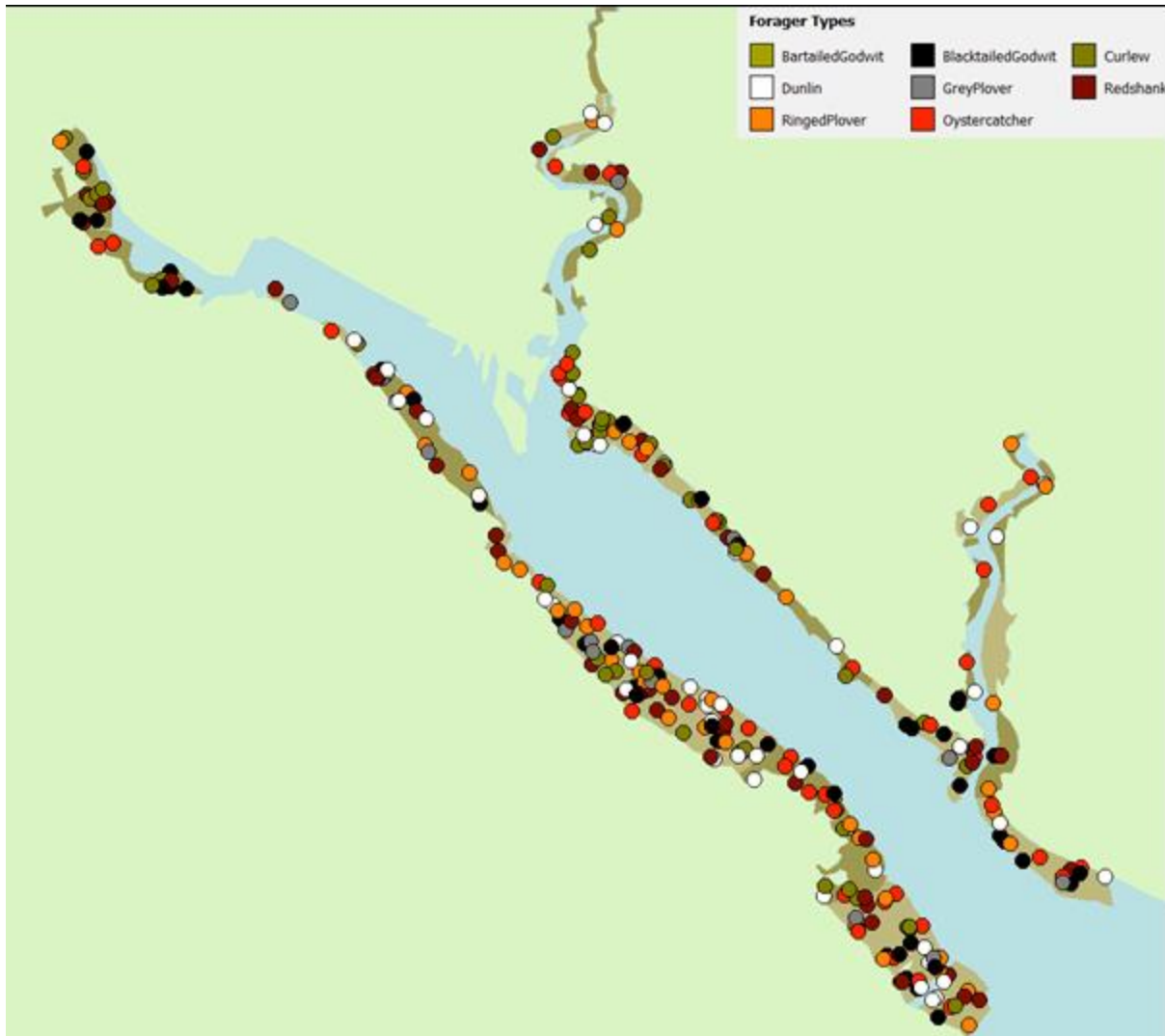- Foraging behaviour – food competition
- Response to disturbance – energetic costs, lost feeding time etc
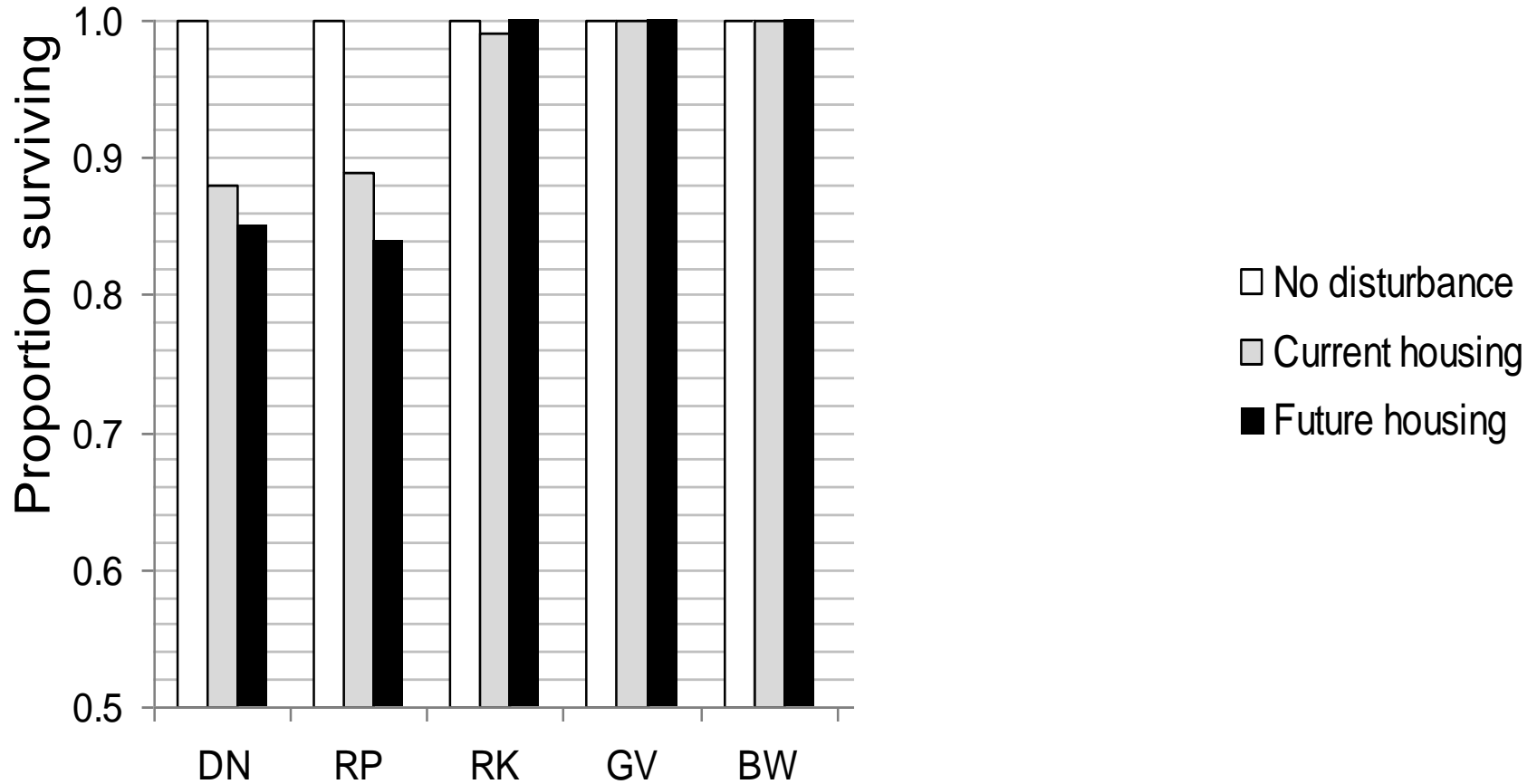- Decision rules – trading-off costs and benefits

What are the population consequences
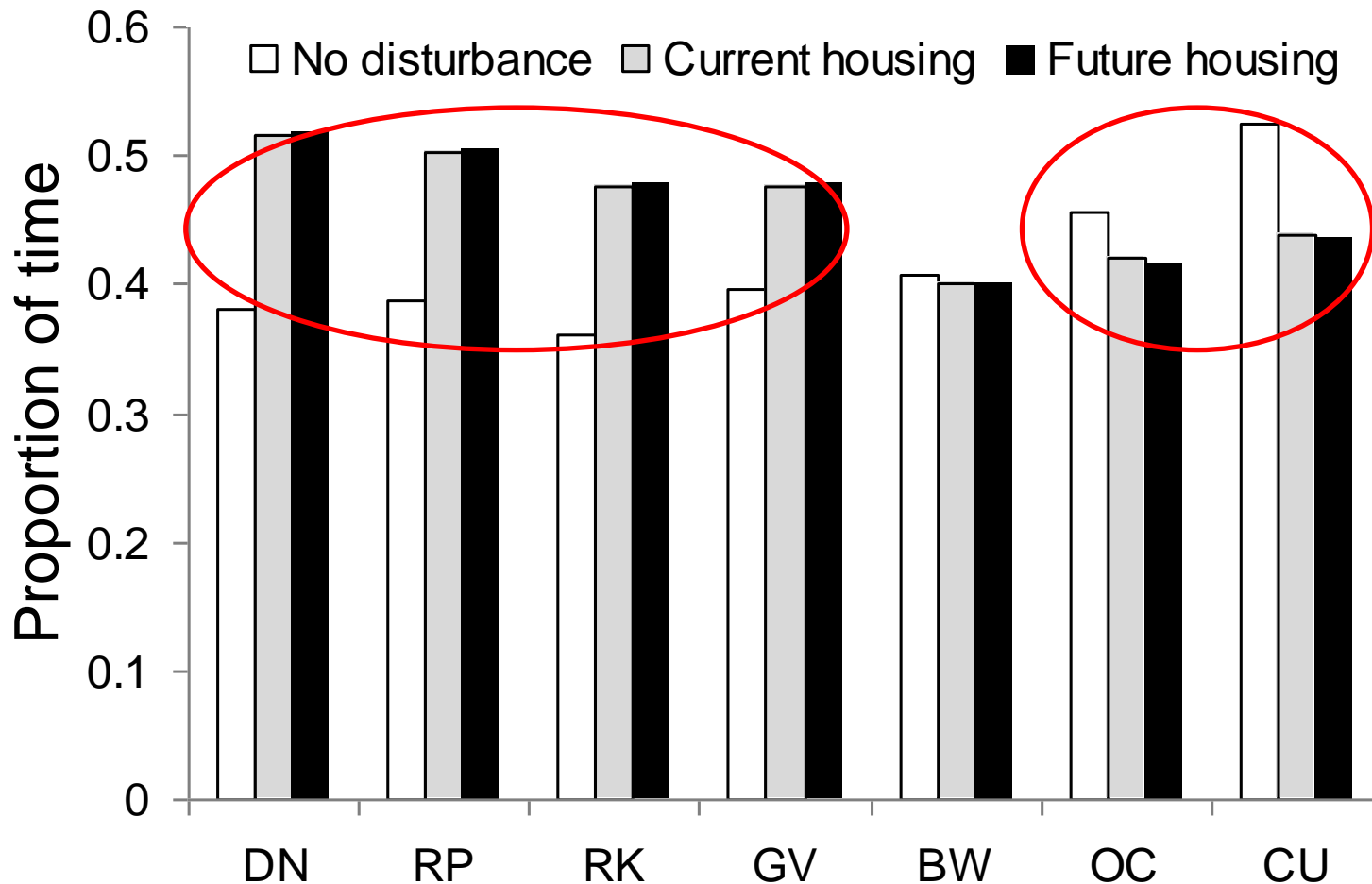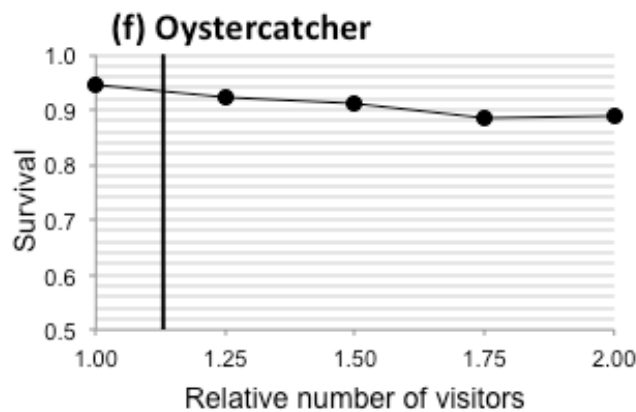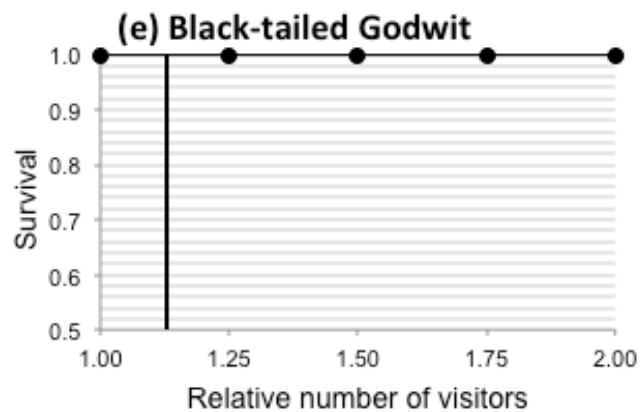- Site Management/Strategic Planning Issues
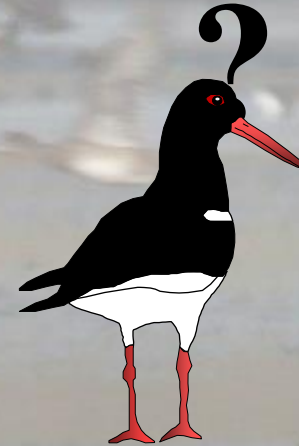
Screen shot of the Southampton Water
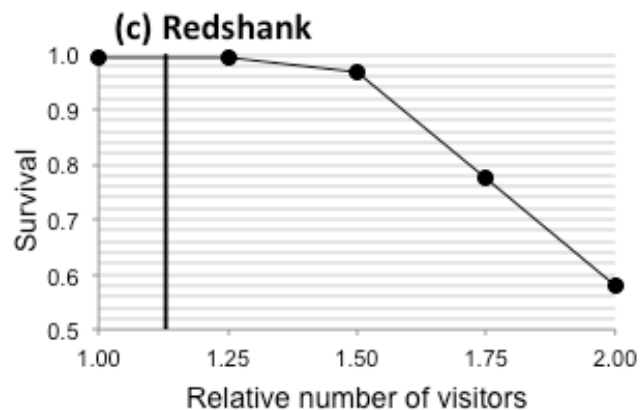model showing an example low
tide distribution of the birds.

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Effect of new housing around the Solent: Proportion Surviving

Effect of new housing around the Solent: Proportion of time feeding
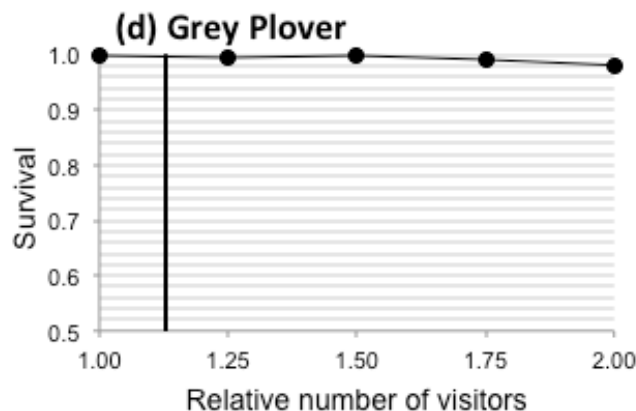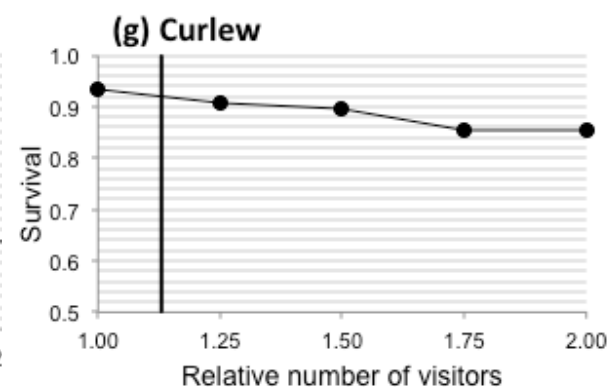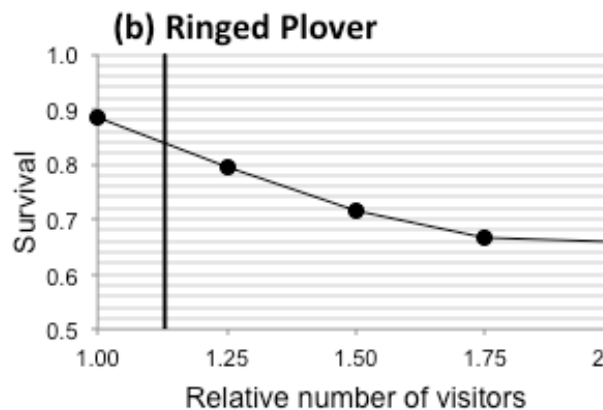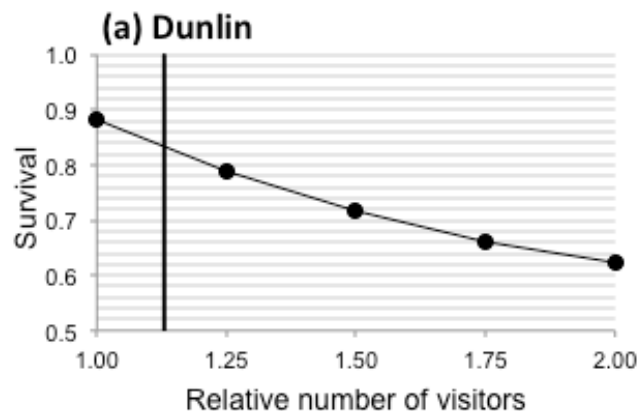
Models provide powerful insight but..

Models only possible:

- For small part of Solent

- For a small selection of species

Difficult assumptions:

- Extent to which birds can move freely within the site

- Intake rate when feeding at night

- Extent to which birds knowledge is perfect – how well can they really select the best places to be

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Chart showing response behaviour by activity type (with sample sizes in parentheses), as a percentage breakdown from 0% to 100%.

Categories (legend):
- No Response (green)
- Alert (grey)
- Walk/Swim (yellow)
- Minor Flight (orange)
- Major Flight (red)

Activities (with counts):
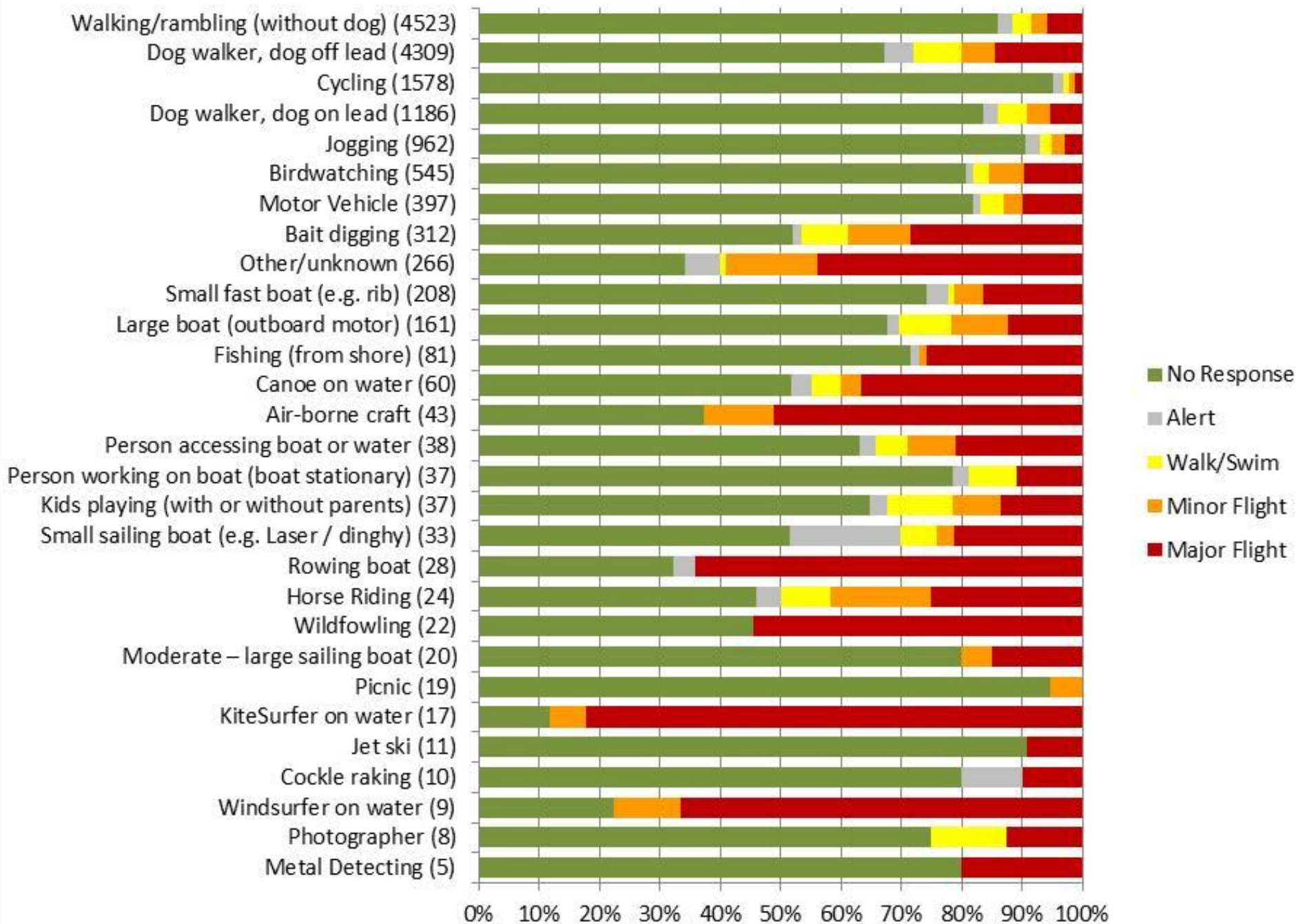- Walking/rambling (without dog) (4523)
- Dog walker, dog off lead (4309)
- Cycling (1578)
- Dog walker, dog on lead (1186)
- Jogging (962)
- Birdwatching (545)
- Motor Vehicle (397)
- Bait digging (312)
- Other/unknown (266)
- Small fast boat (e.g. rib) (208)
- Large boat (outboard motor) (161)
- Fishing (from shore) (81)
- Canoe on water (60)
- Air-borne craft (43)
- Person accessing boat or water (38)
- Person working on boat (boat stationary) (37)
- Kids playing (with or without parents) (37)
- Small sailing boat (e.g. Laser / dinghy) (33)
- Rowing boat (28)
- Horse Riding (24)
- Wildfowling (22)
- Moderate – large sailing boat (20)
- Picnic (19)
- KiteSurfer on water (17)
- Jet ski (11)
- Cockle raking (10)
- Windsurfer on water (9)
- Photographer (8)
- Metal Detecting (5)

Solent Mitigation

- Developer contributions of £272 per dwelling, collected within 5.6km radius (zone identified from postcode data).

- Funding in a central pot.

- Used to fund a delivery officer, warden team, dog walking project, GI, monitoring programme.
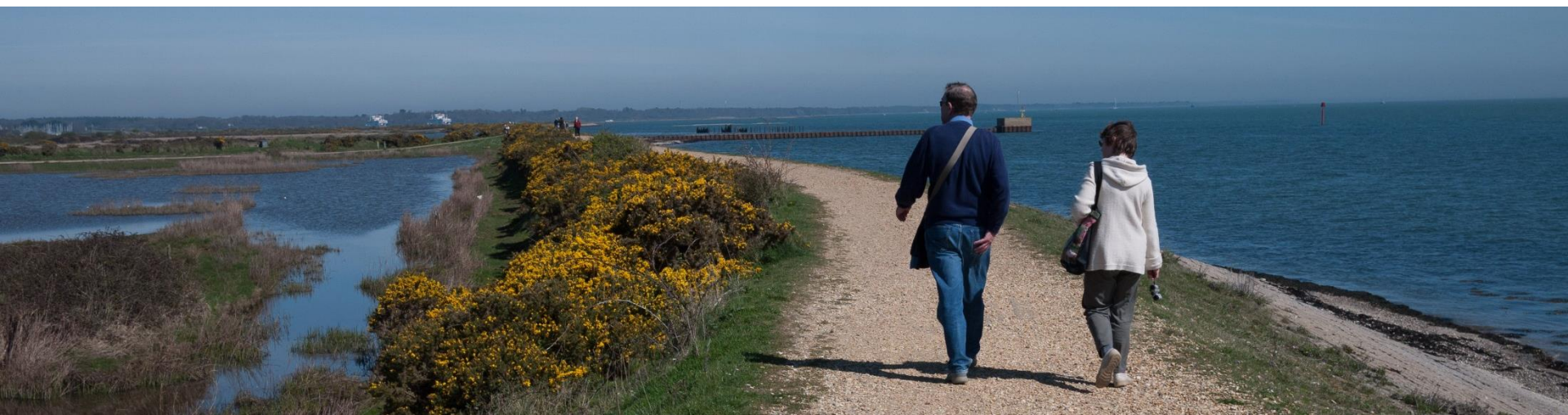
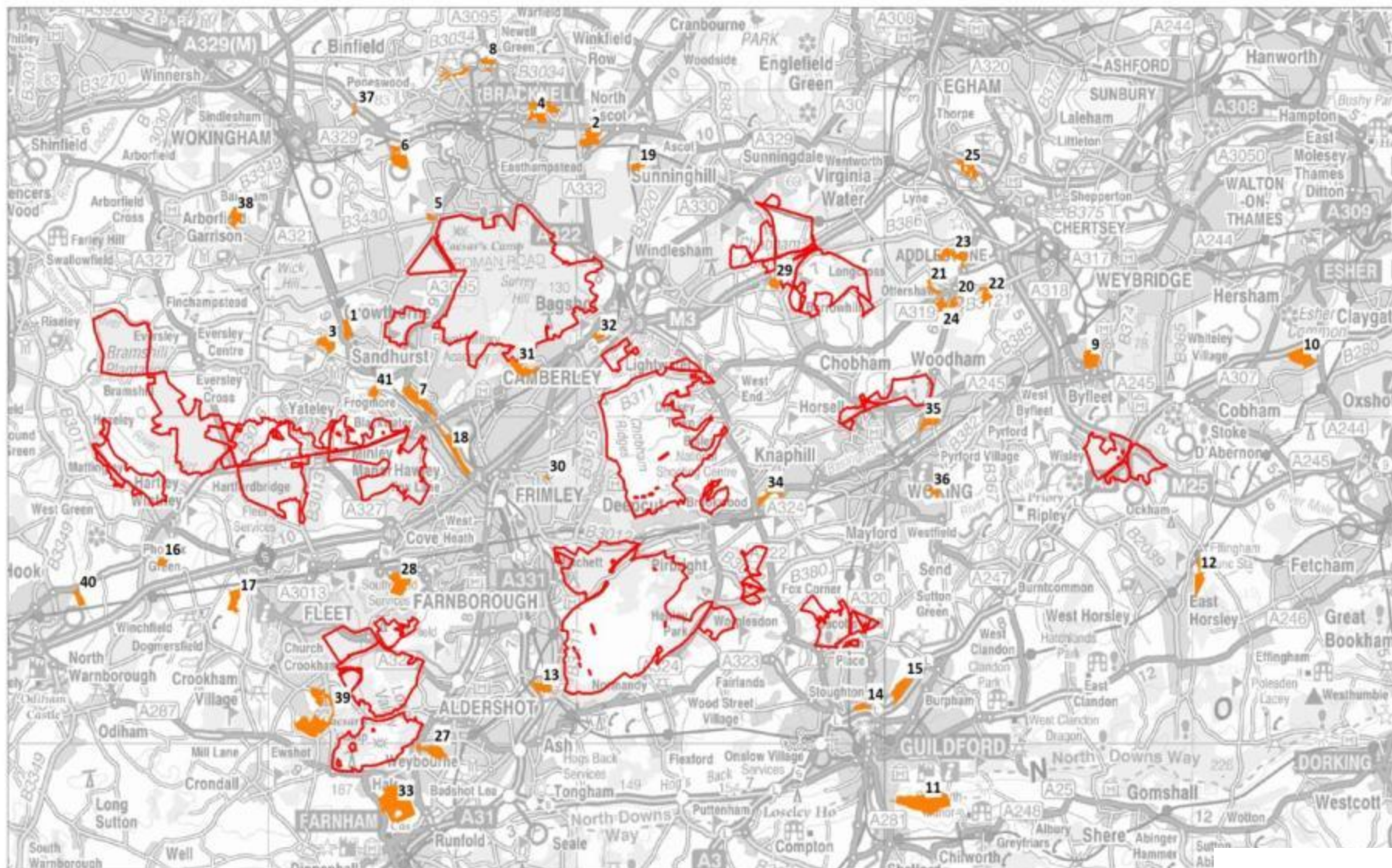# Dorset: Strategic Mitigation & Examples of Projects

- Dorset Dogs

- Mobile Warden Team

- Fire hydrants on Canford Heath

- Improved access on non-heath sites – scrub clearance, new trails etc.

- BMX track and jumps away from the heath

- Work to address erosion

- Contribution to multi-use play area near urban heath

- Dog project 'Dorset Dogs'

- GI – 'SANGs'

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Thames Basin Heaths & SANGS

- 41 SANGs (excluding ones linked to specific large developments)

- Variation in size, character, habitat

- The total area of SANGs is 942ha; max=86ha.
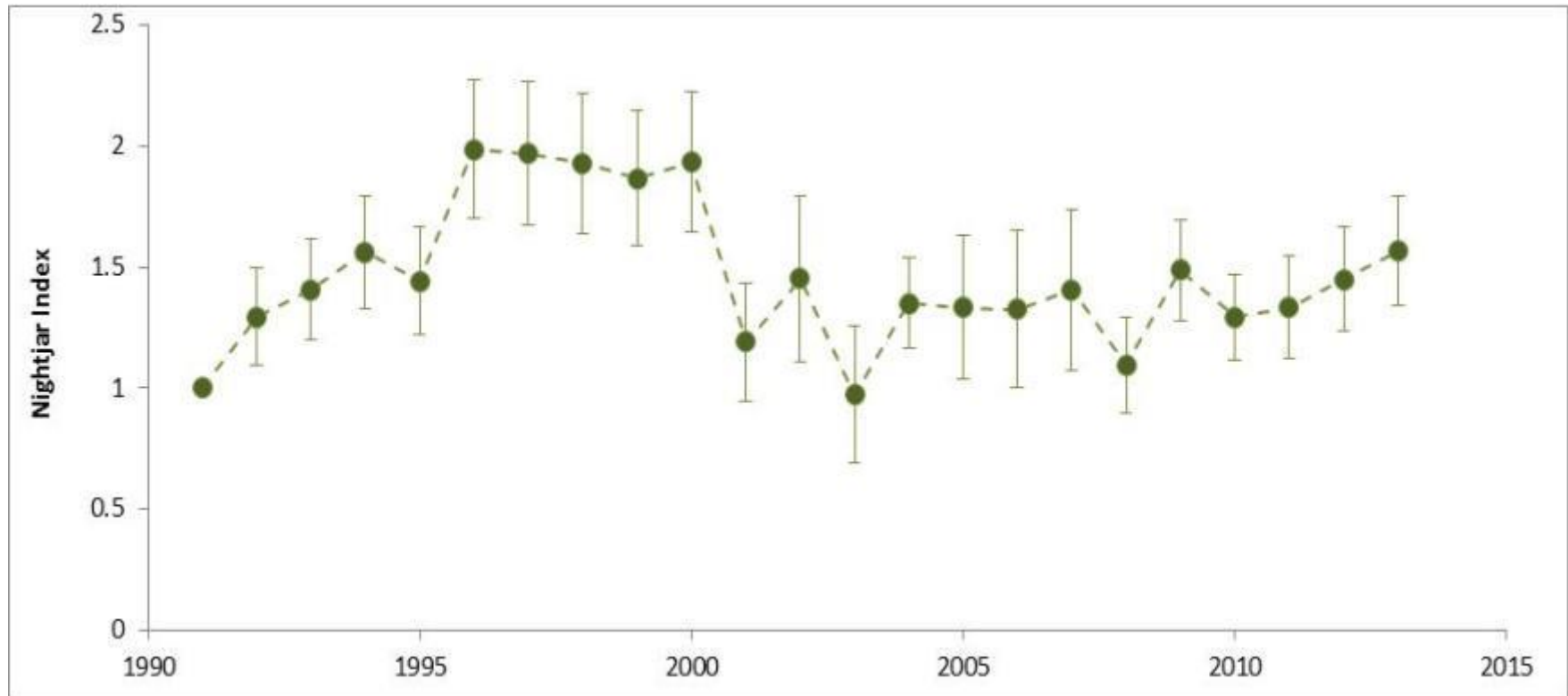
- Area of SANGs equivalent to 11% area of SPA

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Map 1: Thames Basin Heaths SPA and SANGs network

Thames Basin Heaths

SANGs

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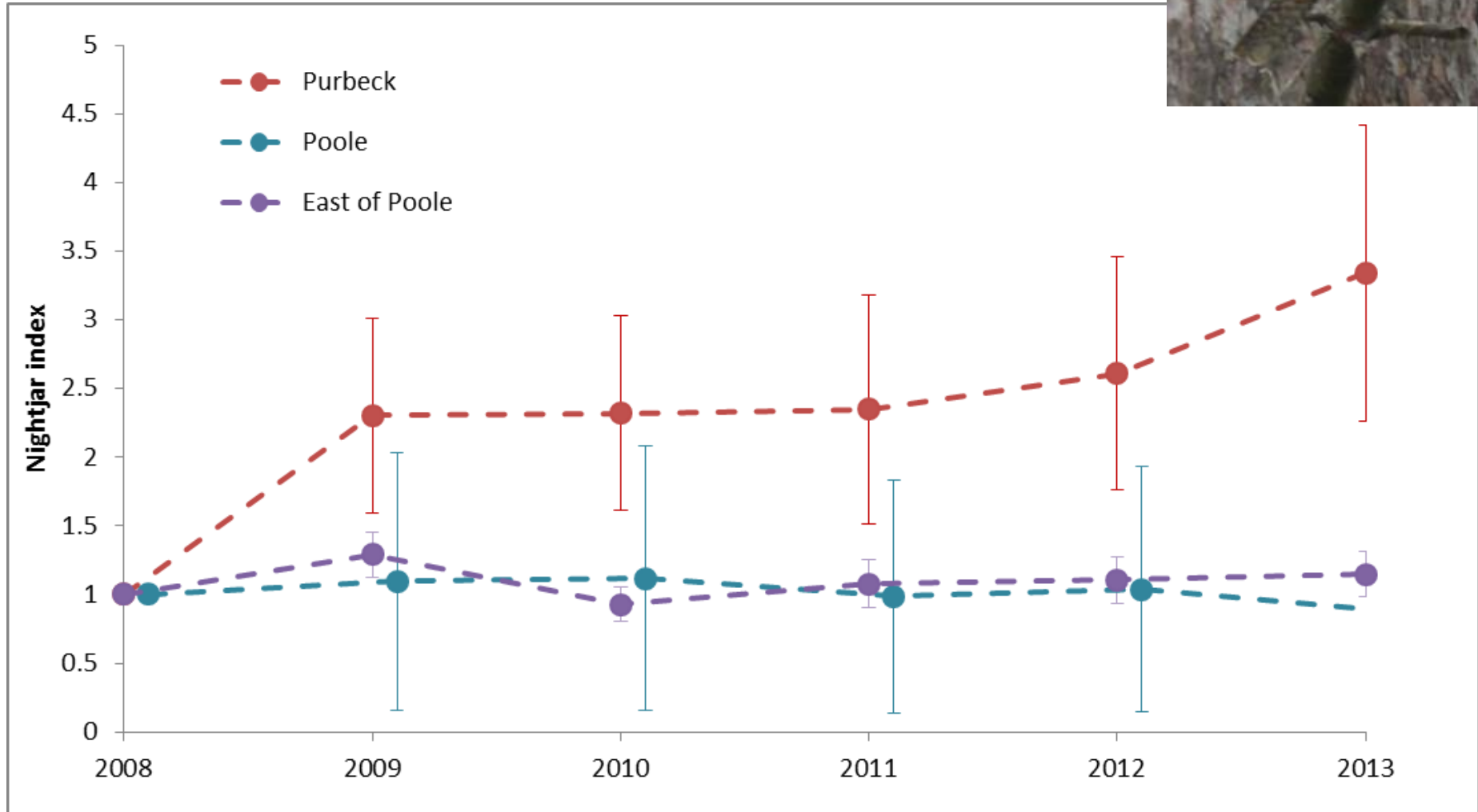
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Nightjar trends

No significant increase or decrease in nightjar numbers

Liley, D. & Fearnley, H. (2014) *Trends in Nightjar, Woodlark and Dartford Warbler on the Dorset Heaths 1991-2013*. Footprint Ecology / Birds of Poole Harbour.

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Nightjar numbers have increased on Purbeck sites while numbers on other sites have shown little change

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Closing thoughts

- Norfolk wide surveys are unique in scale and number of European sites covered simultaneously.

- Allow direct comparison between sites and indication of cumulative impacts of growth.

- Visitor data provides the key evidence for HRAs and mitigation.

- Clear links for Norfolk Valley Fens, Roydon, Brecks with recreation and local housing. Marked changes predicted particularly for the Brecks. Other areas have draw over wide area. Changes in access predicted across all sites (14%).

- Survey provides baseline for mitigation to be established and tailored to relevant sites.

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