



Discussion and analysis relating to the New Forest SAC/SPA/Ramsar and a zone of influence for recreation

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Footprint Contract Reference: 625

Date: 9th February 2021

Version: Final

Recommended Citation: Liley, D. & Caals, Z. (2020). Discussion and analysis relating to the New Forest SAC/SPA/Ramsar and a zone of influence for recreation. Unpublished report by Footprint Ecology.

Summary

This report provides clarification and advice relating to an appropriate 'zone of influence' or 'catchment area' within which visitors from new development are likely to have a significant impact on the New Forest Special Area of Conservation (SAC), Special Protection Area (SPA) and Ramsar designations. It has been commissioned by the New Forest National Park Authority, on behalf of a steering group made up of 6 local planning authorities and statutory agencies. The report draws on the findings of visitor surveys that Footprint Ecology conducted in 2018/19, which included interviews with visitors to the New Forest SAC/SPA/Ramsar.

The zone of influence defines where additional housing growth would trigger likely significant effects on the New Forest SAC/SPA/Ramsar from recreation and as such where mitigation would be required.

We make the following recommendations in relation to a zone:

- The extent of the zone of influence should be derived using data for those travelling from home on short visits rather than tourists.
- Tourist use could be mitigated strategically through an approach based on applications for planning permission relating to tourist use (rather than extending the zone of influence), for example whereby tourist-related development contributed towards strategic mitigation or delivered bespoke mitigation.
- The 75th percentile (derived from the straight-line distance from the interviewee postcode to survey location) should be used as the basis to define a zone around the New Forest, but there is scope to adjust it to reflect particular circumstances.
- The 75th percentile for those visiting from home was 13.79km (straight-line distance) and rounded this would give a zone of 13.8km, best applied to the SAC/SPA/Ramsar boundary, rather than access points or survey points.
- We recommend that the zone of influence should be modified to exclude the following local authorities: Fareham, Gosport and the Isle of Wight. This is to take into account the particular geographic barrier of Southampton Water and the Solent.
- We recommend that large developments just outside the zone of influence should be subject to HRA and that mitigation may be required. This could be either through the provision of very high quality local greenspace or a reduced per dwelling contribution to the strategic mitigation scheme. The need for mitigation should be assessed on a site by site basis and should potentially be relevant for any site of around 200 or more dwellings within 15km of the SAC/SPA/Ramsar boundary.

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Acknowledgements

This report has been commissioned by the New Forest National Park Authority on behalf of a partnership of local authorities and statutory bodies comprising: Eastleigh Borough Council, Forestry England, Natural England, New Forest District Council, New Forest National Park Authority, Southampton City Council, Test Valley Borough Council and Wiltshire Council. We are grateful to David Illsley (New Forest National Park Authority) for overseeing the commission.

1. Introduction

- 1.1 This report has been commissioned by the New Forest National Park Authority, on behalf of a steering group made up of 6 local planning authorities, Natural England and Forestry England. This report provides clarification and advice relating to an appropriate 'zone of influence' or 'catchment area' within which visitors from new development are likely to have a significant impact on the New Forest Special Area of Conservation (SAC), Special Protection Area (SPA) and Ramsar designations. This follows on from visitor surveys that Footprint Ecology conducted in 2018/19, which included over 5,000 on-site interviews across 60 locations in the New Forest. Interviewee postcodes were collected which enabled analysis of the distances that visitors live from the New Forest.
- 1.2 Full details and analysis of the original visitor survey data are set out in the original reports, which provide the context, background and data used in this report. The original work encompassed:
- A telephone survey, involving 2,000 interviews with people living within 25km of the New Forest (Liley & Panter, 2020);
 - An on-site survey, involving 5,236 interviews undertaken at 60 locations within the New Forest SAC/SPA/Ramsar, with people visiting the area for recreation. Counts were also made simultaneously of the numbers of visitors passing each survey location (Liley, Panter, et al., 2020);
 - Surveys counting and recording the distribution of parked vehicles (Panter & Saunders, 2020).
 - An overview of the combined visitor findings in light of housing growth around the New Forest SAC/SPA/Ramsar (Liley, Clarke, R., et al., 2020).
 - A review of the impacts of recreation on the ecological interest of the New Forest SAC/SPA/Ramsar and implications of the findings, in terms of potential mitigation for housing growth (Lake et al., 2020).
- 1.3 The steering group have asked five additional questions which are considered in this report:
1. Is it appropriate to use the data for day trips from home (rather than all visits) when considering a strategic approach to mitigate impacts from new developments surrounding the designated sites? Should an adjustment be considered for those staying on holiday

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who originate from short distances from the New Forest designated sites?

2. Having regard to the approach taken in the Bird Aware Solent Mitigation Strategy (and other strategic mitigation schemes), is it appropriate to use the data reflecting the distance that 75% of the visitors of the on-site survey have travelled in the New Forest as the basis for the catchment area? If so, what established methodology and approaches does this reflect?
3. Would it be appropriate to set the catchment area from the furthest boundary of any of the SAC/SPA/ Ramsar sites (rather than survey points), irrespective of variations in accessibility?
4. Would it be appropriate to set the catchment area using straight-line distances, rather than travel times? Would there be merit in considering the specific circumstances created by Southampton Water – even if a straight-line buffer approach is preferred elsewhere, would there be merit in considering a travel time buffer (or alternative approach) for locations east of Southampton Water?
5. Could a similar approach to development beyond the catchment boundary outlined in the Solent Phase 3 Report (Bird Aware Solent, 2017) be adopted in the New Forest? Have alternative approaches been used elsewhere which would be preferable for the New Forest designated sites?

1.4 These questions form the structure for the rest of this report.

2. Whether to use data on day trips from home only or include holiday-makers

- 2.1 This section addresses whether it is appropriate to use the data for day trips from home (rather than all visits, which would include holiday-makers) when considering a strategic approach to mitigate impacts from new developments surrounding the designated sites. It also considers whether an adjustment should be considered for those staying on holiday who originate from short distances from the New Forest designated sites.

Data review and discussion

- 2.2 The visitor survey results from the on-site survey comparing visitors from home and all interviewees are shown in Table 1. The majority (83%) of people interviewed in the on-site survey were visiting from home and from the postcode data (Table 1) it can be seen that these people lived much closer to the New Forest SAC/SPA/Ramsar.

Table 1: Visitor data on straight-line distances from survey point to home postcode, by type of visitor (from the on-site survey). The sample size for each is the number of valid postcodes.

Grouping	N	Mean (± 1 SE) distance (km)	Median distance (km)	Range distance (km)	75% distance (km)
All interviewees	4,871	30.88 (± 0.85)	7.75	0.07-743.59	21.38
Short visit/day trip from home	4160	13.14 (± 0.38)	6.09	0.07-456.59	13.79
Staying away from home on holiday	587	137.27 (± 3.49)	122.83	0.54-610.03	165.88
Staying away from home with friends or family	94	143.90 (± 13.0)	120.20	6.00-743.59	174.50
None of the above	30	55.90 (± 12.2)	15.00	1.40-217.30	101.30

- 2.3 The postcode data (Map 7 of the on-site visitor survey report) show an extensive spread of postcodes for those visitors that did not day trip from home, covering a very wide area (with multiple postcodes from Scotland).
- 2.4 The New Forest is a National Park and has a national profile as a tourist destination. The proportion of tourists and the very large distance they come is different to other sites where strategic mitigation schemes are in place. For example, tourists account for a relatively small proportion of visitors to the Dorset Heaths, the Thames Basin Heaths and the North Kent Coast. In the Solent visitor surveys (Fearnley et al., 2010), which were used to

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inform the zone and mitigation for the Solent mitigation schemes, only 5% of the interviewees were on holiday. These surveys were conducted in the winter only but serve to highlight the particularly high proportion of tourists visiting the New Forest (14% of all interviewees in the New Forest on-site survey were on holiday and staying away from home).

- 2.5 Purely based on the distances involved and geographic scatter of the postcode data for the tourists interviewed at the New Forest SAC/SPA/Ramsar, a zone approach that included these visitors would seem difficult to justify.
- 2.6 The visitor data relating to the tourists is also relevant to consider. The majority of tourists were interviewed during the summer school holidays (see Figure 2 in the on-site survey report). During the summer, those on holidays accounted for 22% of visitors compared to 12% in the spring and 11% in the winter. Tourist visits are therefore concentrated during the summer. The survey data also indicate that tourists undertake different activities, with dog walking (an activity with particular impacts in terms of the SPA interest) accounting for a much smaller proportion of visits and more tourists undertaking walking and cycling. This is not to imply tourists do not have impacts, it is just that the issues are different.

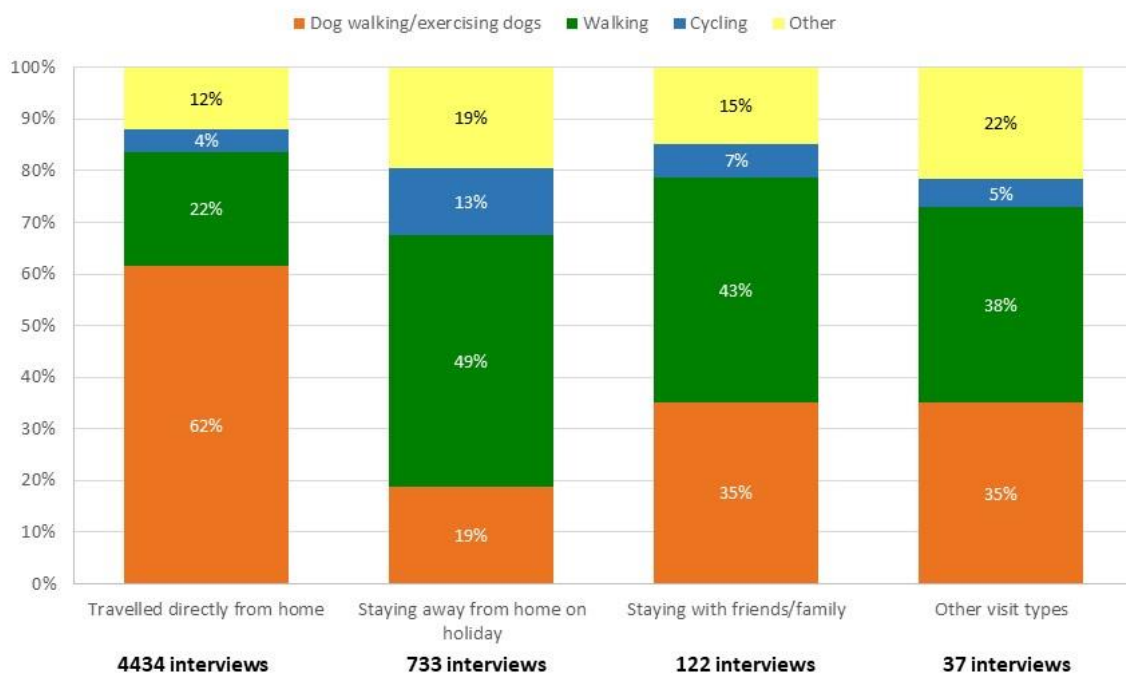


Figure 1: Percentage of visitors undertaking different broad activities by visit type; from on-site visitor survey.

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- 2.7 These data would suggest that tourists – as might be expected – behave differently. They also visit different locations. For example, as highlighted in paragraph 4.13 of the visitor survey report, locations where tourists (those staying away from home in a second home, mobile home, camping or on holiday) accounted for a high proportion (above a fifth) of interviewees included Whitefield Moor (33%), Tilery Road (36%), Clayhill Heath (39%), Bolderwood (41%), Knightwood Oak (47%), Balmer Lawn (46%) and Bolderford Bridge (62%).
- 2.8 Tourists will also visit infrequently, for example 58% of those people interviewed in the on-site survey that were staying away from home on holiday were on a first visit to the New Forest. For those who had come from home that day only 3% were on their first visit. Engagement options (i.e. as part of a mitigation package) for visitors who are on a first visit will be very different to those with prior experience of the Forest.
- 2.9 These data would all indicate that tourists could require different mitigation approaches and have different impacts to those visitors who come directly from home on short trips or day visits. As such mitigation may need to be tailored to ensure the relevant impacts are addressed or different costs levied.
- 2.10 A further consideration is that any increase in the overall volume of staying tourists is likely to require an increase in tourism accommodation in or close to National Park. This would imply that the best approach to addressing mitigation for increasing tourists will be through applications for tourism development rather than residential. This would mean that mitigation could still be addressed strategically for tourism use.
- 2.11 In Dorset, the Dorset Heaths Planning Framework SPD considers tourist use and states that some applications for tourist related development within the zone of influence need to provide mitigation and can do so through a contribution to the strategic mitigation scheme. For the New Forest it would seem that seeking developer contributions from new tourism development is justified and this could be considered on a case-by-case (or local planning authority) basis, using evidence relating to the size of accommodation provided, accommodation type and likely occupancy. It will be necessary to consider the relevant impacts from tourists and ensure the contribution is fair and appropriate.

Recommendations re tourists staying away from home

Visitor data show that tourists come from a very wide geographic area, represent a relatively small proportion of visitors at most locations/most of the year and behave differently to other visitors. A high proportion are on their first visit to the New Forest. As such it would seem that any zone of influence should be derived using data for those travelling from home on short visits.

This is not to say that an increase in tourism use would not result in impacts for the European site, it is simply that the tourists should not be used to define the zone of influence. Tourist use could be mitigated strategically through an approach based on applications for planning permission relating to tourist use, i.e. the way to include tourism in any strategic approach to mitigation would be through applications relating to tourist development rather than through the zone of influence.

3. Use of the 75th percentile

- 3.1 This section has regard to the approach taken in the Bird Aware Solent Mitigation Strategy (and other strategic mitigation schemes), to consider whether it is appropriate to use the data reflecting the distance that 75% of the visitors of the on-site survey have travelled to the New Forest as the basis for the catchment area. We consider what established methodology and approaches does this reflect?

Data review and discussion

- 3.2 From the on-site survey in the New Forest the 75th percentile for all visitors was 21.4km and for those travelling from home it was 13.8km (Liley, Panter, et al., 2020, see also Table 1 in this report). To provide context, selected examples of the 75th percentile from raw visitor survey data (drawn from similar surveys undertaken by Footprint Ecology at other countryside sites and derived from interviewees travelling from home), ranked by distance, include:

- Dorset Heaths: 3.4km (Panter & Caals, 2020)
- Rodborough Common: 3.8km (Panter & Caals, 2019b);
- Epping Forest: 6.2km (Liley et al., 2018);
- East Devon Pebblebed Heaths: 7.92km (Liley, Panter, & Underhill-Day, 2016);
- Ashdown Forest: 9.6km (Liley, Panter, & Blake, 2016);
- Deben Estuary: 13.2km (Lake et al., 2014);
- Hatfield Forest: 13.4km (Saunders et al., 2019);
- Cannock Chase: 14.8km (Panter & Liley, 2019);
- Braunton Burrows: 10.6km (Liley & Saunders, 2019);
- Cotswold Beechwoods: 15.4km (Panter & Caals, 2019a);
- Norfolk Broads: 29.7km (Panter et al., 2017);
- North Norfolk Coast: 40.6km (Panter et al., 2017).

- 3.3 The examples above include a range of different types of sites with a different draw, different housing densities surrounding them etc. Many are AONB and one is a National Park. The figures relate to the visitor survey data and do not necessarily reflect the choice of zone of influence that is used at the given sites.
- 3.4 The 75th percentile (i.e. the distance within which 75% of interviewees lived) from interview data, applied as a buffer of fixed distance around the European site boundary, has become a standard approach to defining a

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zone of influence. It was first used in Dorset Heaths and the Thames Basin Heaths. At both these locations, 5km was rounded up from the 75th percentile from the visitor survey data (Clarke et al., 2006; Liley et al., 2006). The assessor's report from the Examination in Public for the South-east Regional Plan (see Burley, 2007) provides background and context on the different zone options originally considered for the Thames Basin Heaths.

- 3.5 Subsequently the approach has been widely used at other sites to define a zone of influence. The 75th percentile has been used at heathland sites (such as the Dorset Heaths, Ashdown Forest SPA/SAC, the Suffolk Sandlings SPA, the Thames Basin Heaths SPA), coastal sites (such as the Solent, North Kent) and at woodland SAC sites such as Epping Forest SAC and Burnham Beeches. While these sites differ in recreation use and habitat, the overall principle is sound - the use of the 75th percentile is a useful way to identify the area within which the majority of visitors live.
- 3.6 While the approach has become a standard there is no set guidance or standard reference and it is important that any mitigation schemes is tailored to particular local circumstances. Guidance on Habitats Regulations Assessment (Tyldesley, Chapman, & Machin, 2020¹) is clear that the appropriate area or distance of any zone of influence to be defined should be based on a site-by-site analysis, in light of all available evidence.
- 3.7 As far as we are aware, all strategic mitigation schemes addressing recreational impacts have used the 75th percentile, but with some variation in how it is defined, for example:
- In the Dorset and Thames Basin Heaths the 5km is rounded up (for example in the original Dorset 2006 survey by Clarke *et al.* 75% of all visitors came from 4.4km);
 - In South-east Devon (where the scheme covers three European sites), the zones are based on a postal survey rather than on-site interviews and were defined in relation to the distance at which visit rates flattened off, with 10km used for all sites (and trimmed to the estuary). This was a pragmatic choice derived from a review of the data and 71-87% for the Pebbebed Heaths and equated to 74-84% for the Exe Estuary and 55-56% for Dawlish Warren (see Liley et al., 2014 for background).
 - In Suffolk, the strategic mitigation scheme covers multiple European sites and visitor data (with postcodes) were only

¹ See section D.6.2

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available for two of them, in both cases indicating a 13km zone based on the 75th percentile. 13km was therefore drawn around all the sites in the strategy and then the overall area divided into different payment zones (see Hoskin et al., 2019 for details).

- 3.8 As such the use of the 75th percentile provides an established national approach that has been widely adopted, but has been tailored to the local circumstance and it is appropriate and important to do this.

Recommendations re use of the 75th percentile

The use of the 75th percentile to define a zone of influence has become a standard approach to define a zone of influence for recreation and is widely used. It broadly defines the area the majority of visitors originate from. However, there is no set guidance and the approach has been tailored to particular circumstances and locations, this is appropriate and any zone should reflect the particular issues, types of recreation and the way visitors use a site.

We recommend the use of the 75th percentile (13.8km based on the visitors from home) as the basis to define a zone around the New Forest, but there is scope to adjust it to reflect particular circumstances.

4. How to define the boundary of the zone in relation to the SAC/SPA/Ramsar

- 4.1 This section addresses whether the catchment area should be defined from the furthest boundary of any of the SAC/SPA/ Ramsar sites (rather than survey points), irrespective of variations in accessibility?

Data review and discussion

- 4.2 The on-site visitor survey data presents information on the distances from the interviewee's home postcode to the survey location and the data in Table 1 reflect these distances. The 75th percentiles (for example the 13.79km figure for those on a short visit from home) reflects the distance to the survey point. If this is then applied to the New Forest SAC/SPA/Ramsar boundary, it will mean more than 75% of the interviewees' postcodes are within the zone.
- 4.3 Map 1 shows these data, with the 13.79km boundary plotted around the New Forest SAC/SPA/Ramsar boundary alongside the home postcodes of those on a short visit directly from home. A total of 90% of those postcodes are within the 13.79km boundary.
- 4.4 This is the case with all the other mitigation schemes and was in fact one of the criticisms initially levelled at the initial mitigation approach proposed by Natural England for the Thames Basin Heaths. The point is considered by Burley (2007) who states:

"Criticisms are also levelled at the use the nearest geographical point of the SPA to calculate the zones rather than the nearest access point. While I can understand this argument, in view of the open nature of much of the land on the SPA I think it would be unwise to merely use official access points as the starting point for calculation of the zones. Although many drivers may well use official car parks others will not and will park unofficially on adjoining tracks or patches of ground. Indeed I saw this occurring when I visited Ash Ranges. Walkers and cyclists would be even less constrained by official access points.

In addition, access points could change over time as NE suggests. For instance a car park or access point could be re-sited in the future as part of an access management scheme. Taking all these factors together, I do not consider that it would be appropriate to use the distance to access points for establishing the zones. That is not to say that it could never be a matter to consider when

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determining whether or not an individual development is likely to have a significant effect on the SPA. “

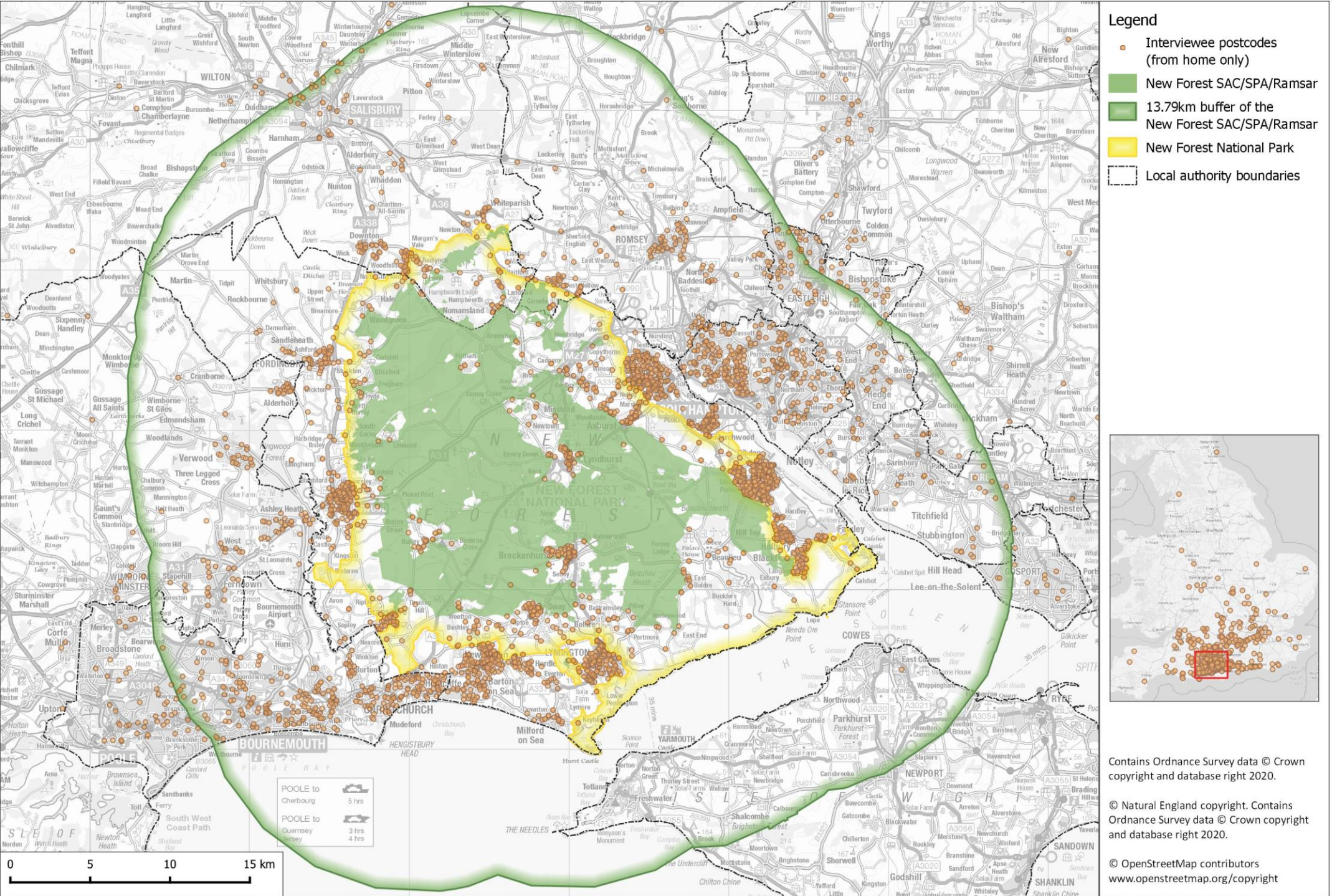
- 4.5 Expanding on the points made by Burley, the following considerations are relevant:
- 4.6 The New Forest on-site visitor survey involved 60 survey points, and these are a sample of the locations where people can enter the SAC/SPA/Ramsar. These represent a good proportion of the access points around the New Forest and were carefully chosen, with a number around the perimeter of the SAC/SPA/Ramsar. If the survey had focussed on survey points in the middle, or indeed had only surveyed such points, then there could be concern that, were the 75th percentile to be applied to the SAC/SPA/Ramsar boundary it would cover too large an area. This is not the case as the survey included numerous peripheral survey points, as shown by Map 1 in the on-site survey report.
- 4.7 It would be possible to apply the 75th percentile – e.g. 13.79km to the survey points only, however this would clearly be hard to justify, as there were numerous (un-surveyed) access points. For example, the visitor work undertaken by Footprint Ecology in 2018/19 also included vehicle counts, with counts covering 270 locations where visitors park. Of these, just over half were Forestry England formal car-parks.
- 4.8 Map 2 shows the 13.79km boundary plotted as a linear boundary from all the parking locations included in the vehicle counts. The 13.79km boundary from the SAC/SPA/Ramsar is shown for comparison. It can be seen there is relatively little difference. It is better to use the SAC/SPA/Ramsar boundary because access points can change over time with some closing and others appearing. It is also hard to definitively map all the access points, as for example verge parking, pub car-parks, roadside parking etc. are perhaps particularly likely to change. Visitors can also access on foot directly from home and a zone of influence based on access points might not necessarily include such visitors.
- 4.9 Applying the 75th percentile to the SAC/SPA/Ramsar boundary is clearly precautionary, but that fits with the Regulations and the general approach. Ultimately it means a robust, defensible and constant boundary that is less likely to be challenged.

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Recommendations relating to how to define the boundary in relation to the SAC/SPA/Ramsar

The 75th percentile is best applied to the SAC/SPA/Ramsar boundary, rather than access points or survey points. Use of the SAC/SPA/Ramsar boundary is precautionary in that it means more than 75% of visitor postcodes are included, nonetheless this fits with the Regulations, reflects the approaches used in other parts of the country, is robust and defensible.

Map 1: Home postcodes of those on a short visit directly from home with the 13.79km buffer of the New Forest SAC/SPA/Ramsar site

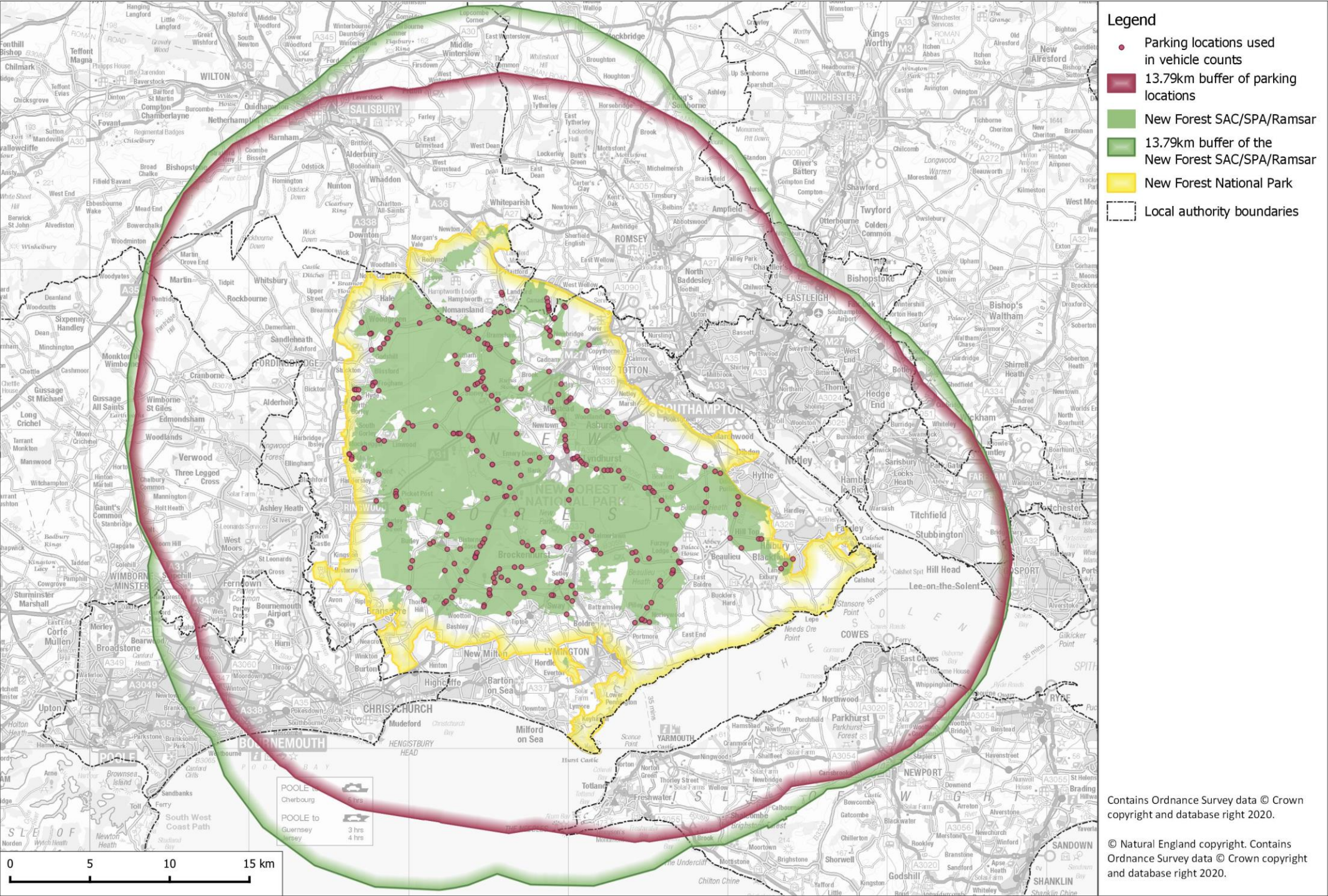


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Map 2: Comparison of a 13.79km buffer of the New Forest SAC/SPA/Ramsar site and a 13.79km buffer of parking locations used in the vehicle counts



5. Relative merit of travel time, travel distance and straight-line distance in defining the boundary

- 5.1 This section considers whether the catchment area should be set using straight-line distances or travel times. It also addresses whether there is merit in considering the specific circumstances created by Southampton Water.

Data review and discussion

- 5.2 The on-site report and the telephone survey data both summarise the postcode data in relation to the straight-line distance (i.e. as the crow flies) and in relation to travel distance and travel time. There are pros and cons with each approach.
- 5.3 The straight-line distance is simple to measure, simple to map and apply and easy to understand. Where there are marked geographical boundaries or particular variations in ease of travel then it may not necessarily accurately reflect where people originate from.
- 5.4 The use of travel distance or travel time provides alternative methods. Travel distance reflects the distance along the road network while travel time reflects the journey time, for example allowing for the difference in travel speeds on motorways compared to rural lanes. The use of travel distance or travel time is reliant on GIS software and algorithms that generate isochrones. Different software will produce different results, depending on the rules that underpin the route choices, travel speeds etc. Any changes in the road network, for example road junctions, speed restrictions or similar will change where the isochrones are plotted. With travel time in particular, the isochrones will vary markedly according to whether average speeds or maximum speeds are used. The travel time will also depend on traffic conditions, which are often not taken into account in simpler algorithms. The traffic conditions will vary greatly dependent on time of day, season etc. and is an added complexity. Other issues with the use of travel time or distance to define a zone relate to the complexity of the zone boundary. The isochrones are very complex shapes with wavy edges and narrow wedges that go alongside roads. If these are smoothed the result is something akin to the straight-line distance.

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- 5.5 As such the use of travel time and travel speed data are useful in understanding the patterns of access observed and interpreting results, but are a potentially poor basis by which to define a zone of influence. If travel time or travel distance were to be used, it would potentially open the door to mitigation approaches that involved speed restrictions or added travel distance.
- 5.6 The assessor's report from the Examination in Public for the South-east Regional Plan (see Burley, 2007) suggested that it would be more sensible to define the outer boundary of the zone of influence using travel distance. He suggested that travel time was impractical to use due to it varying at different times of day and during the week. Subsequently, the delivery framework for the Thames Basin Heaths (Joint Strategic Partnership Board, 2008) set the zones using straight-line distances and this was because the use of travel distance had been trialled and led to increased confusion and uncertainty.
- 5.7 We are not aware of any strategic mitigation approaches that use travel distance or travel time to define a zone of influence and all use straight-line distances, we recommend the use of straight-line distance for the New Forest.
- 5.8 There is however the issue of Southampton Water. There is some evidence from the visitor survey work that Southampton Water creates a barrier to access. For example, Map 6 in the telephone report shows the number of visits made by interviewees in different areas (defined using a hexagonal grid). The shading on the map reflects cells with high (red) to low (blue) visit rates. It can be seen that there is a predominance in blue shading towards the south-east of the map, around Gosport, reflecting low visits from this area.
- 5.9 The size of the shaded hexagons indicates the sample size and where there are small cells it would suggest the potential for sampling error, however the cells in this area are large, indicating we can have confidence in the results for those cells.
- 5.10 Further evidence for low levels of use from the Gosport area come from Table 8 in the telephone report. This shows that residents in Gosport, based on the results from the survey, are estimated to make an average of 5.8 visits per year to the New Forest SAC/SPA/Ramsar. This compares to 15.33 for Fareham, 24.6 for Eastleigh and 27.7 for Southampton.

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5.11 In Figure 2 we show visit rates by authority derived from the on-site data and reflecting the area 10-15km from the edge of the New Forest SAC/SPA/Ramsar. The visit rate is simply the number of interviews conducted in the on-site survey per residential property. The data relate only to the 10-15km band to allow comparison between authorities in recreation use from the area where the zone of influence would be drawn. The shorter bars therefore reflect authorities where the number of people interviewed was low in relation to the amount of housing. Gosport has a particularly low rate and it can be seen that Fareham is also relatively low. While Winchester apparently has a relatively high visit rate (at this distance band), note the rate is derived from a very small sample of just 4 interviewees.

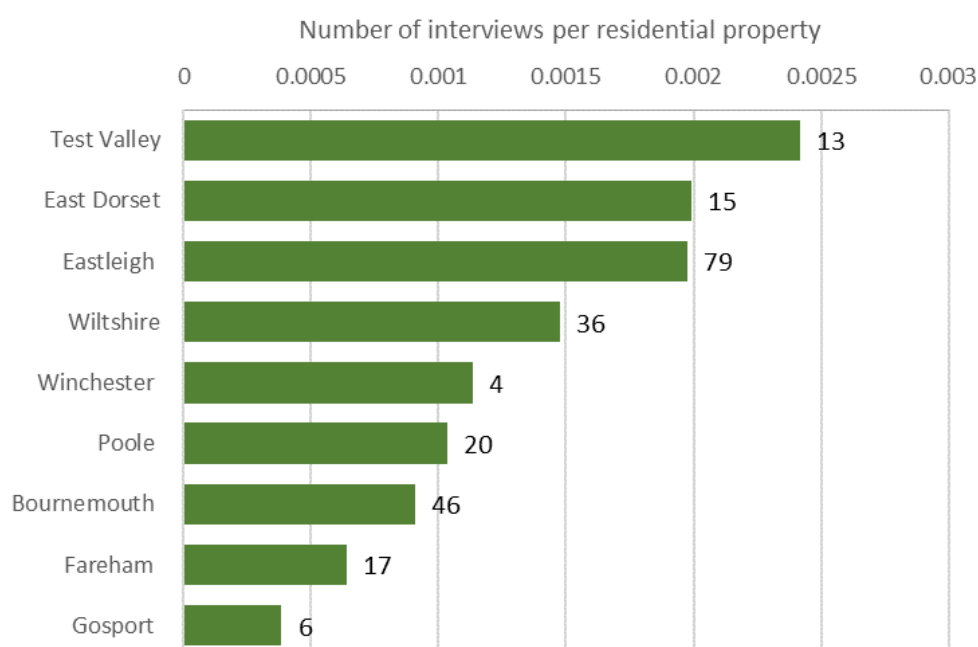


Figure 2: Visit rate (number of interviews per residential property) by local authority and for the 10-15km from the New Forest SAC/SPA/Ramsar boundary only. Value labels give the number of interviewees from the relevant authority in the given band. Note for the Dorset authorities we have used the former local authority areas.

5.12 There are precedents whereby other strategic mitigation approaches adapt the boundary of the zone of influence to the 75th percentile to account for estuaries and coastlines (e.g. Suffolk, South-east Devon) or the complexities created by multiple over-lapping zones applied to different European sites. In South-east Devon, the mitigation schemes relates to three European sites (Dawlish Warren SAC, the Exe Estuary SPA/Ramsar and the East Devon

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Pebblebed Heaths SAC/SPA). The Pebblebeds zone of influence does not extend west of the Exe Estuary while the Dawlish Warren zone does not extend east of the estuary. This means that development to the west only contributes towards mitigation at two sites (Dawlish Warren and the Exe Estuary) and likewise development to the east only contributes to mitigation for the Exe Estuary and the Pebblebed Heaths. It is entirely appropriate that zones of influence are set on a site-by-site basis (Tyldesley et al., 2021).

- 5.13 The question is therefore where to draw any boundary for the outer zone to the south-east. In the absence of any physical boundary to use or clear demarcation in the data, it would seem pragmatic to use the local authority boundaries to define the south-east limit of the zone. We recommend therefore that the 13.8km boundary is applied around the New Forest SAC/SPA/Ramsar but that Gosport, Fareham, Winchester and the Isle of Wight are excluded. This recommendation is made on the basis that the visit rates are lower in these areas and the administrative boundaries provide the most straightforward boundary to use. The Fareham boundary is around 13.9km from the bridge at Totton on the A33 (i.e. the main crossing point) so truncating the zone of influence in this way makes sense given the travel constraints posed by Southampton Water.

Recommendations relating to straight-line distance, travel distance or travel time to define a zone of influence

We recommend that the zone of influence should be based on straight-line distance, but this should be modified to exclude the following local authorities: Fareham, Gosport, Winchester and the Isle of Wight.

6. Development beyond the catchment boundary

- 6.1 This section addresses whether a similar approach to development beyond the catchment boundary outlined in the Solent Phase 3 Report should be adopted in the New Forest. It also considers whether there are alternative approaches for development outside the catchment that are used elsewhere which would be preferable for the New Forest designated sites.

Data review and discussion

- 6.2 Setting a zone of influence defines a set demarcation outside which likely significant effects are ruled out. In reality, visitor rates decline gradually with distance and (assuming no barriers to movement exist), there is likely to be little real difference in visit rates between development at 13.5km or 14km.
- 6.3 In recognition of this challenge, some strategic mitigation schemes recognise that large developments just outside the zone of influence might still trigger likely significant effects and mitigation may be required. For example:
- 6.4 In the **Thames Basin Heaths** (5km zone of influence) the Delivery Framework (Joint Strategic Partnership Board, 2008) sets out that applications for large scale development beyond the zone of influence should be assessed on an individual basis. This follows from the advice of the technical assessor (Burley, 2007) who recommended that residential developments of 50 or more dwellings within 5-7km should be assessed and may be required to provide mitigation.
- 6.5 In **North Kent** (6km zone of influence), Dartford (see Dartford Borough Council, 2017 for guidance) requires large development proposals (15 dwellings or more) beyond the 6km (but within a 10km travel distance) to provide information to support HRA. Two options for mitigation are suggested, either contributions towards the mitigation scheme (developments over 100 units only) at a reduced per dwelling rate, or the provision of greenspace.
- 6.6 It is notable however that other schemes such as the Dorset Heaths or Cannock Chase do not have particular provision for large sites coming forward just outside the zone of influence.

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- 6.7 In Figure 3 we show visit rates for the New Forest SAC/SPA/Ramsar in relation to distance, using the results from the on-site survey. This essentially shows how the number of visits made per household vary according to how far away people live. Those living closer to the survey points visit much more frequently. As such development close to the New Forest SAC/SPA/Ramsar will have a much greater impact, in terms of visit rates, compared to those further away. It is helpful to understand this pattern as it helps identify what scale of growth outside the zone of influence might be of concern. Using the predicted visit rate (the orange line), 1 house at 1km away from SAC/SPA/Ramsar would be equivalent (in terms of the number of visits generated) to:
- 9 houses at 5km;
 - 103 houses at 10km;
 - 308 dwellings that are 14km away.
- 6.8 It should be noted also that those who visit frequently will make shorter visits while those who visit from further afield and less frequently will spend longer when the visit, and as such the impact from 14km compared to 1km is not necessarily 308x.
- 6.9 As such, it would seem, very approximately, that developments of a scale of around 200 or more might be relevant just outside the zone of influence – this being a size that is perhaps approaching the equivalent level of use from a single dwelling at 1km.

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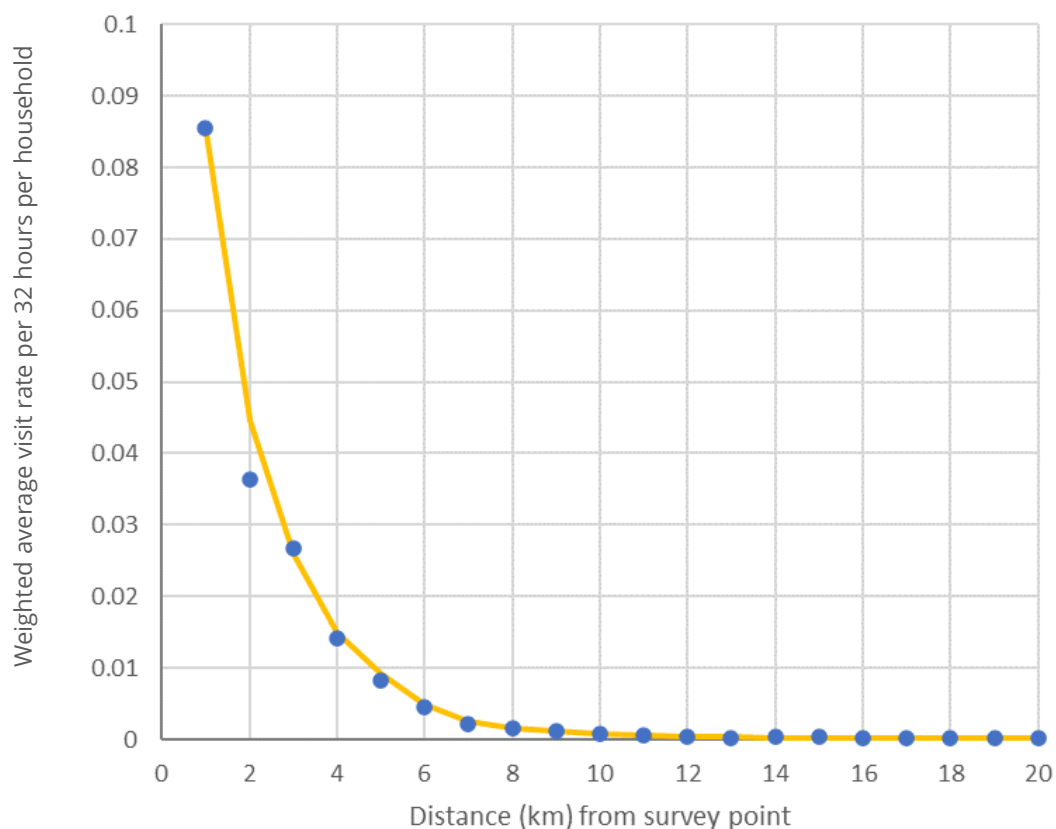


Figure 3: Visit rate (i.e. number of visits made per household per 32 hours) in relation to distance from the survey point. Data from spring-winter surveys only (32 hours survey work per location). Graph as shown in figure 5 of the visitor summary report. Orange line is the predicted average rate and the blue dots the observed data.

6.2 Approaches to mitigation could involve either:

- A contribution to the mitigation scheme that is currently being established, potentially contributing to particular measures relating to types of access likely from people living further away; or
- Measures directly linked to the development, such as alternative greenspace provision (at or nearby the new development);

6.10 A contribution to the mitigation scheme has the advantage that it is potentially easy to apply and relatively straightforward to implement. There are however concerns as the data show that there are differences in activity type (dog walkers tend to live closer, cyclists and walkers further away²), visit

² See table 14 of the on-site visitor survey report

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frequency (daily visitors tend to live closer³) and even the preference for different interventions (visitors from further afield showed a preference for country parks⁴). Given differences in behaviour, it would follow that different mitigation approaches may be relevant.

- 6.11 As visitors from closer distances tend to visit more frequently, on-site awareness raising initiatives such as wardening should work well and help to influence people's behaviour to minimise disturbance. For more erratic visitors travelling from further afield, wardening is likely to be less efficient as there will be a large pool of visitors who visit infrequently and are less likely to encounter a warden. Educational approaches do need to be targeted to the audience (Marion & Reid, 2007) and for visitors from further afield use of interpretation and signage may work well. Frequent visitors are perhaps less likely to read interpretation compared to less frequent or first-time visitors.
- 6.12 Developer contributions if applied could be scaled back to reflect the lower levels of use and types of mitigation required. With a low cost per dwelling it would mean the threshold for the scale of development where mitigation was required might need to be quite high to cover the costs of administration.
- 6.13 An alternative approach could be that that large developments incorporate mitigation measures such as on-site greenspace provision to the extent that they 'absorb their own smoke'. The greenspace provision would need to be of a high quality to provide a realistic alternative to the New Forest, but this may not be impossible to achieve.
- 6.14 There is no hard and fast rule as to how outside the zone of influence (defined by 13.4km and then adjusted to account for Southampton Water) large developments might be relevant, this is likely to depend on the size of the development, the location and a range of other factors. As such, the distances at which large developments are relevant is perhaps best considered on a case-by-case basis and is likely to be most relevant to those within 15km of the SAC/SPA/Ramsar boundary.

³ See table 14 of the on-site visitor survey report

⁴ See paragraph 4.62 of the on-site visitor survey report

Recommendations relating to development outside the catchment boundary

We recommend that large developments just outside the zone of influence should be subject to HRA and that mitigation may be required. This could be either through the provision of very high quality local greenspace or a reduced per dwelling contribution to the strategic mitigation scheme. The need for mitigation should be assessed on a case-by-case basis and should potentially be relevant for any site of around 200 or more dwellings, particularly those within 15km of the SAC/SPA/Ramsar boundary.

Key criteria that will be relevant will be the scale of development, the distance outside the zone of influence and it will be useful to check back to the survey data to check whether there is evidence of recreational use of the New Forest from adjacent areas.

References

Bird Aware Solent. (2017). *Solent Recreation Mitigation Strategy*.

<http://www.birdaware.org/CHttpHandler.ashx?id=29372&p=0>

Burley, P. (2007). *Report to the panel for the draft south east plan examination in public on the Thames Basin Heaths Special Protection Area and Natural England's Draft Delivery Plan*. Planning Inspectorate.

<http://www.eipsoutheast.co.uk/downloads/documents/20070220094334.doc>

Clarke, R. T., Liley, D., Underhill-Day, J. C., & Rose, R. J. (2006). *Visitor access patterns on the Dorset Heaths*. English Nature Research Report 683.

Dartford Borough Council. (2017). *Large site options and Habitat Regulations in Dartford*.

https://www.dartford.gov.uk/_data/assets/pdf_file/0007/382390/Final-large-site-options-and-Habitat-Regulations-Developer-Guide-updated-July-2017.pdf

Fearnley, H., Clarke, R. T., & Liley, D. (2010). *The Solent Disturbance and Mitigation Project. Phase II. On-site visitor survey results from the Solent Region*. Footprint Ecology/Solent Forum.

Hoskin, R., Liley, D., & Panter, C. (2019). *Habitats Regulations Assessment Recreational Disturbance Avoidance and Mitigation Strategy for Ipswich Borough, Babergh District, Mid Suffolk District and East Suffolk Councils—Technical report* (Unpub. No. 472). Footprint Ecology / Ipswich BC.

Joint Strategic Partnership Board. (2008). *Thames Basin heaths Delivery framework*. South East England Regional Assembly.

DISCUSSION AND ANALYSIS RELATING TO THE
NEW FOREST SAC/SPA/RAMSAR AND A ZONE OF
INFLUENCE FOR RECREATION

Lake, S., Liley, D., & Saunders, P. (2020). *Recreation use of the New Forest SAC/SPA/Ramsar:*

Impacts of recreation and potential mitigation approaches (No. 499). Footprint

Ecology / Test Valley BC.

Lake, S., Petersen, C., Panter, C., & Liley, D. (2014). *Deben Estuary Visitor Survey*

(Unpublished Report No. 205). Footprint Ecology / Deben Estuary Partnership.

Liley, D., Clarke, R., Panter, C., & Saunders, P. (2020). *Recreation use of the New Forest*

SAC/SPA/Ramsar: Overview of visitor results and implications of housing change on

visitor numbers (Published Report No. 499). Footprint Ecology / Test Valley BC.

Liley, D., Hoskin, R., Lake, S., Underhill-Day, J., & Cruickshanks, K. (2014). *South-east Devon*

European Site Mitigation Strategy. Footprint Ecology.

Liley, D., Jackson, D., & Underhill-Day, J. (2006). *Visitor Access Patterns on the Thames Basin*

Heaths (No. 682). English Nature Research Reports, N682.

file:///S:/reports%20%26%20pdfs/Papers%20linked%20to%20Endnote/ENRR682

%20TBHVisitorReport.pdf

file:///S:/reports%20%26%20pdfs/Papers%20linked%20to%20Endnote/Footprint

%20Reports/Thames%20Basin%20Heaths%20Visitor%20Access%20Patterns,%20

April%202006,%20FINAL.pdf

Liley, D., & Panter, C. (2020). *Recreation use of the New Forest SPA/SAC/Ramsar: Results of a*

telephone survey with people living within 25km (Unpublished No. 499). Footprint

Ecology / Test Valley BC.

Liley, D., Panter, C., & Blake, D. (2016). *Ashdown Forest Visitor Survey 2016*. Unpublished

report by Footprint Ecology for Wealden, Mid Sussex, Lewes, Tunbridge Wells,

Tandridge and Sevenoaks District Councils.

DISCUSSION AND ANALYSIS RELATING TO THE
NEW FOREST SAC/SPA/RAMSAR AND A ZONE OF
INFLUENCE FOR RECREATION

Liley, D., Panter, C., Caals, Z., & Saunders, P. (2020). *Recreation use of the New Forest*

SAC/SPA/Ramsar: New Forest visitor survey 2018/19 (Unpublished No. 499).

Footprint Ecology / Test Valley BC.

Liley, D., Panter, C., & Underhill-Day, J. (2016). *East Devon Pebblebed Heaths Visitor*

Management Plan [Unpublished report for East Devon District Council].

Liley, D., Panter, C., Weitowitz, D., & Saunders, G. (2018). *Epping Forest Visitor Survey 2017*

(Unpub. No. 438). Footprint Ecology / City of London.

Liley, D., & Saunders, P. (2019). *Braunton Burrows Visitor Surveys* (Unpublished Report

No. 522). Footprint Ecology / North Devon Council.

Marion, J. L., & Reid, S. E. (2007). Minimising Visitor Impacts to Protected Areas: The

Efficacy of Low Impact Education Programmes. *Journal of Sustainable Tourism*,

15(1), 5–27. <https://doi.org/10.2167/jost593.0>

Panter, C., & Caals, Z. (2019a). *Cotswold Beechwoods Visitor Survey 2019* (Unpublished

Report No. 497). Footprint Ecology / Stroud DC.

Panter, C., & Caals, Z. (2019b). *Rodborough Common Visitor Survey* (Unpublished Report

No. 497). Footprint Ecology / Stroud DC.

Panter, C., & Caals, Z. (2020). *Dorset Heaths 2019 Visitor Survey* (Unpub. Report No. 545).

Footprint Ecology / Urban Heaths Partnership / English Nature.

Panter, C., & Liley, D. (2019). *Cannock Chase Visitor Survey 2018* (Unpub. No. 494).

Footprint Ecology / Cannock Chase SAC Partnership.

Panter, C., Liley, D., & Lowen, S. (2017). *Visitor surveys at European Protected Sites across*

Norfolk in 2015 and 2016. Unpublished report by Footprint Ecology for Norfolk

County Council.

DISCUSSION AND ANALYSIS RELATING TO THE
NEW FOREST SAC/SPA/RAMSAR AND A ZONE OF
INFLUENCE FOR RECREATION

Panter, C., & Saunders, P. (2020). *Recreation use of the New Forest SPA/SAC/Ramsar: New*

Forest Vehicle Counts 2018/19 (Unpublished No. 499). Unpublished report by

Footprint Ecology for Test Valley Council.

Saunders, G., Liley, D., Panter, C., & Weitowitz, D. (2019). *Hatfield Forest: Visitor Survey and*

Impact Management (Unpub. No. 486). Footprint Ecology / National Trust.

Tyldesley, D., Chapman, C., & Machin, G. (2021). *The Habitats Regulations Handbook*. DTA

Publications. <https://www.dtapublications.co.uk/handbook/>