

# Using behavioural insights to optimise leaflet content and delivery

Results from online trial and recommendations for on-site applications to promote responsible recreation

This report is one of four final deliverables from a project undertaken by the Behavioural Insights Team for Natural England, promoting responsible recreation by dog-walkers at two pilot sites. The four deliverables are:

1. **Using Behavioural Insights to Reduce Recreation Impacts on Wildlife: Guidance and Case Studies from Thames Basin Heath and the Solent.** This is the main project report. It summarises each phase of the project (Target, Explore, Solution, Trial and Scale), and establishes guidelines for running similar projects in the future.
2. **Explore phase report.** This details the findings from field research including an online survey, visitor interviews, and expert interviews.
3. **Literature review.** This synthesises existing evidence on the use of behavioural interventions to promote responsible recreation by visitors to nature areas.
4. **Trial phase report** (this document). This details the findings from an online experiment testing the impact of behaviourally-informed communications materials on dog walkers' awareness of wildlife disturbance issues, and recommends how to use these findings in the field.

## Summary

In the first part of this report, we present the results of an online randomised controlled trial that rigorously tests the effect of leaflets on people's comprehension of wildlife disturbance issues. 2512 dog-owners from across the UK participated in the trial, and the key results are:

- People who saw no leaflet had lower understanding of wildlife disturbance than people who saw either a control leaflet (based on Bird Aware Solent's existing but unpublished dog-walkers' guide) or a treatment leaflet (version incorporating additional behavioural insights)

- The control and treatment leaflets scored equally well on improving people's comprehension
- People who saw a treatment leaflet without site branding on the front cover were slightly more likely to say they would pick it up, and rated the leaflet slightly more positively, suggesting existing branding may not be optimised for dog walkers

We conclude that leaflets can be an effective way to improve comprehension and understanding of wildlife disturbance among dog walkers. Their usefulness, therefore, depends upon their provision on-site or in other locations being targeted to increase the likelihood that they will be picked up and read. Further, increasing understanding through leaflets should be paired with intervention on site (i.e. signage or other incentives to do the right thing) to ensure that raised awareness is converted to action.

Despite previous concerns, our findings suggest dog-walkers are unlikely to perceive the existing version of the leaflet negatively. This is a valuable finding, and one which provides a good basis for further discussion about possible modifications to the existing leaflet to ensure information about wildlife disturbance can be widely communicated and acted on.

With the leaflets found to be effective, but no strong difference between the two leaflet designs, in the second part of the report, we provide recommendations based on behavioural insights for how to optimise leaflet *delivery*. We also provide guidance on how to measure uptake. Suggestions include:

- prioritising audiences who are experiencing relevant moments of change in their lives, such as moving house or getting a new dog, as they are more likely to be forming new habits;
- delivering leaflets from a trusted authority, or a person/organisation with whom the recipient identifies, for example by providing leaflets at vets' offices or having the leaflets endorsed by a local dog-owners' group;
- drawing attention to leaflet dispensers on-site by providing low-cost incentives such as dog-poo bags, dog treats, or by making the dispensers visually salient.

We also recommend that key messaging elements are taken or modified from the leaflet, and widely communicated through other channels where appropriate, again leveraging a range of behavioural insights to maximise engagement with the information. This includes using social media channels to broadly communicate key messages, and incentivising engagement with these, for example through a prize draw in return for sharing or engaging (please note that a promotion of this was included in the behaviourally-informed leaflet).

## 1. Online trial

### 1.1 Aims

The aim of the online trial was to rigorously test the effectiveness of behaviourally-informed messaging on people's comprehension of what constitutes 'wildlife disturbance'. While we note that raised awareness or understanding does not necessarily result in behaviour change, our Explore research indicated that many dog-walkers already considered

themselves nature-lovers, and recognised their responsibility to protect natural areas (suggesting some motivation was already there). However, their understanding of wildlife disturbance was not universally high. This lack of knowledge was therefore identified as a key barrier. We would therefore expect some positive impact from addressing this barrier, while noting that the impact would be higher if we also prompt dog-walkers, on site through signage and other trail features, to turn this awareness into action. As such, this online trial tested just one part of the complete intervention.

A secondary aim was to test how behaviourally-informed messaging affected people's perceptions of the message, reflected by how positive and useful they felt it was. Our Explore work also revealed a perceived opposition between bird-watchers and dog-walkers, and that many dog-walkers felt implicitly criticised by existing material on wildlife disturbance. However these concerns had not yet been tested.

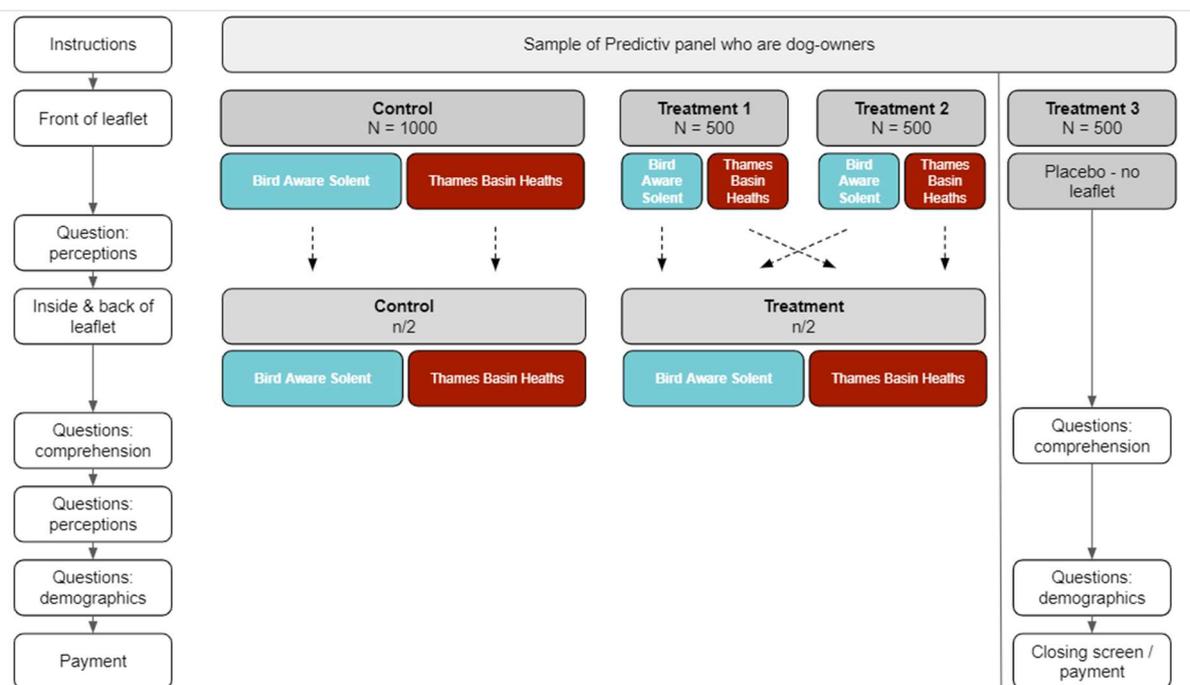
## 1.2 Trial procedure

This experiment was a randomised controlled trial (RCT), where some participants were randomly allocated to see a control (business as usual) version of the leaflet, others a treatment version informed by additional behavioural insights, and a third group saw no leaflet at all. Participants were asked questions to measure their comprehension of issues around wildlife disturbance and (for those that saw a leaflet) their feelings about different components of the leaflet. We conducted the trial on [Predictiv](#), an online platform for running behavioural experiments built by the Behavioural Insights Team. Predictiv has a panel of over 200,000 people in the UK; all participants who are dog-owners were eligible to participate in this trial.

### 1.2.1 Leaflet versions

We developed two versions of the leaflets, one version with Bird Aware Solent branding and one with Thames Basin Heaths branding, so that half of the control group and half of the treatment group were randomly allocated to see the Bird Aware Solent versions (treatment and control), and the other half saw the Thames Basin Heaths versions (treatment and control).

We introduced a further variation within the treatment group, testing different front cover designs. All participants in the treatment group saw the same inner panels of the leaflet, but there were two different designs for the front of the leaflet (Treatment 1 and Treatment 2). Participants who were allocated to the treatment group were randomly allocated to see one of these two versions of the front cover.



**Figure 1.** Overview of the trial, showing the groups participants were randomly allocated to, the desired sample sizes, and the steps participants were taken through.

The different versions of the leaflets are described in Table 1, and screenshots are provided in Appendix 1.

**Table 1.** Overview of the different test conditions, the behavioural insights used in the treatment group, and the sample sizes achieved.

Condition	Description	N
Control	This is the business-as-usual condition. For Bird Aware Solent, we used an existing leaflet developed for dog-walkers ('The Solent Coast: A Dog-Walker's Guide'). For Thames Basin Heaths, we created a modified version with appropriate branding and site-specific content (e.g. changing the site-specific species of birds).	1001
Treatment	This is an intervention with multiple behaviourally-informed components, including: <ul style="list-style-type: none"> <li>Action-oriented branding targeted towards dog-owners (e.g. 'top tips for winter walks') rather than branding from the site, which may be perceived as a conservation-oriented messenger</li> <li>Simple checklist of actions for dog-owners to take, emphasising new things try with their dog rather than reducing wildlife disturbance</li> <li>Positive images, including a birdwatcher with a dog (in order to reduce perceived opposition between birdwatchers and dog-walkers)</li> </ul>	Treatment 1: 509 Treatment 2: 514

	<ul style="list-style-type: none"> <li>• Appealing to dog-owners as ‘nature lovers’: our Explore work showed that most dog-owners in our sample considered themselves nature lovers, so we also include a social norms message</li> <li>• A social norm messaging, highlighting that most dog-walkers consider themselves nature lovers</li> <li>• Information about what wildlife disturbance looks like, highlighting the birds’ story to make disturbance more salient, and emphasising potential losses to dog walkers</li> <li>• Content that is useful and interesting to dog-walkers beyond providing information about disturbance, including new routes to try with your dog and birds to spot along the way</li> </ul> <p>Some of these features aimed to increase understanding of wildlife disturbance, whilst others sought to make the leaflet more useful and appealing to dog-walkers to ensure it wasn’t solely about wildlife conservation.</p>	
No leaflet	Participants in this group see no materials before responding to relevant survey questions.	488
<b>TOTAL</b>		<b>2512</b>

## 1.2.2 Outcome measures

We are interested in two main outcomes:

1. A comprehension score, calculated as the proportion of correct answers to eight comprehension questions (see Appendix 2)
2. Participants’ stated intent to pick up the leaflet after they had seen only the front cover

And several secondary outcomes:

3. Our Explore work had revealed that an important comprehension issue to focus on was people not realising that birds flying away constitutes disturbance. For this reason, in addition to analysing the overall comprehension score, we also analysed people’s answers to the question ‘Is the following an example of disturbance [yes / no / don’t know]? Birds flying away when a person or dog comes near.’
4. Participants’ perceptions of how positive the leaflet was towards dog-walkers and how useful they felt it was.

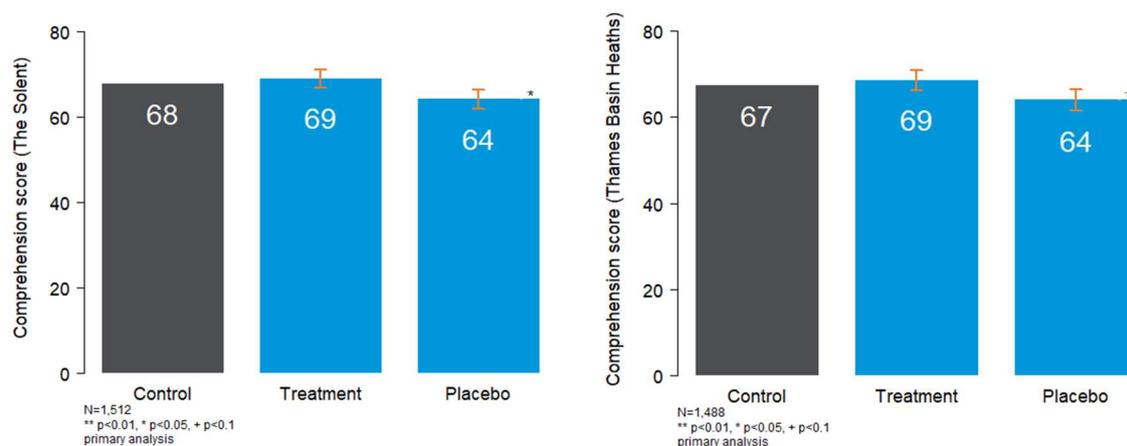
The full list of the questions participants answered is given in Appendix 2.

## 1.3 Results

### 1.3.1 Comprehension

On average, participants scored 67.2% correct out of the eight comprehension questions. There was no statistically significant difference in comprehension scores between the control and treatment leaflets, although scores were directionally higher in the treatment group.

Comprehension scores were significantly lower in the group who did not see a leaflet (Figure 2), suggesting that leaflets do improve baseline awareness of wildlife disturbance.

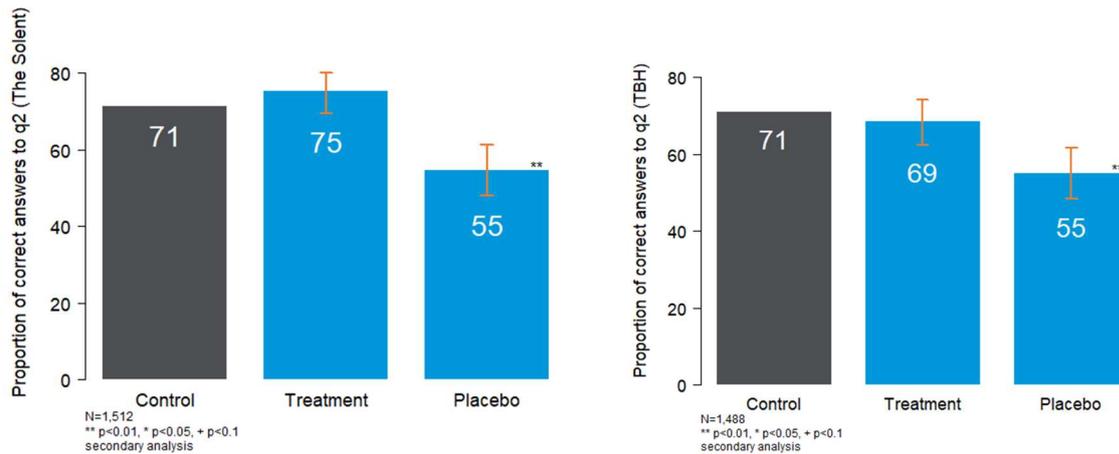


**Figure 2.** Comprehension scores (percentage of questions a participant answered correctly). 'Placebo' is the group who did not see a leaflet. The panel on the left shows results for the Bird Aware Solent leaflets, and the right Thames Basin Heaths.

The difference between the placebo and leaflet groups is relatively modest (~4 percentage points, or 6.5% in relative terms). However, this is to be expected as many of the eight comprehension questions could be considered to be relatively 'easy', and were included, in part, to shield the question we most care about - causing birds to fly away.

In terms of demographics, we note that those over 55 years old scored significantly higher (around 7%) than the 18-24 age group; and women had slightly (but not significantly) higher overall comprehension scores than men.

In our additional analysis focusing only on birds flying away, we see similar patterns to the overall comprehension figures, albeit with much larger results. That is to say, the difference in overall comprehension scores (above) is largely driven by increased understanding that causing birds to fly away counts as a wildlife disturbance (Appendix 3). Specifically, 71.4% of participants who saw a leaflet correctly identified that causing birds to fly away constitutes disturbance, while only 55% of those who did not read a leaflet correctly answered this question. This is a statistically significant difference of 16.6 percentage points, or 23 per cent fewer correct answers. Again, the treatment leaflet did not differ from the control.

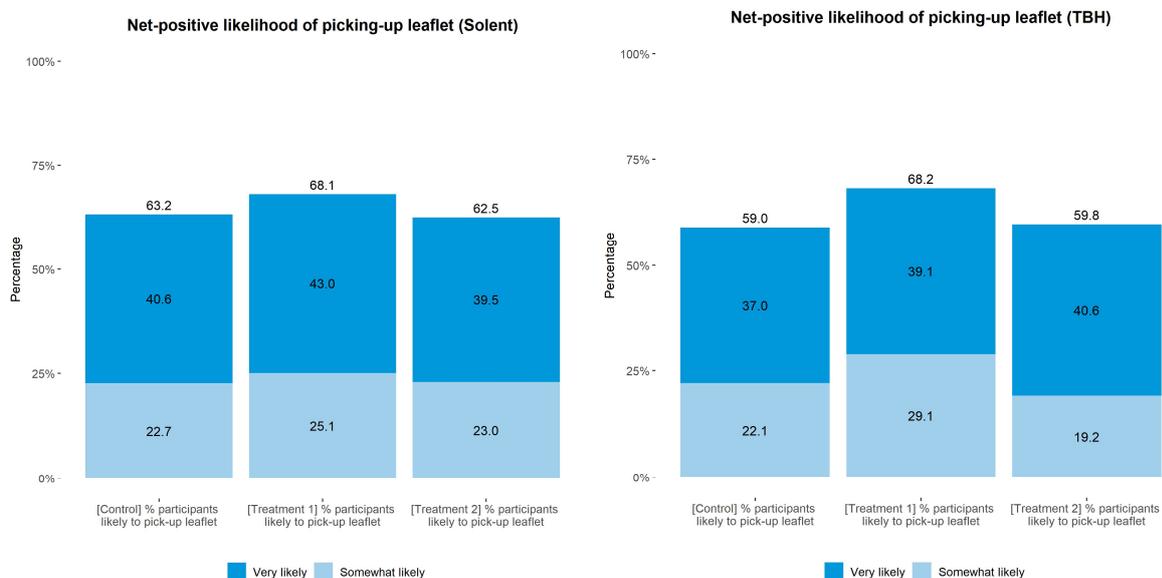


**Figure 3.** Understanding that birds flying away constitutes disturbance. ‘Placebo’ is the group who did not see a leaflet. The panel on the left shows results for the Bird Aware Solent leaflets, and the right Thames Basin Heaths. The score is the percentage of people who answered this question correctly.

In Appendix 3, we give the results from all the individual comprehension questions.

### 1.3.2 Intent to pick up the leaflet

Overall, participants’ stated likelihood of picking up the leaflet, after seeing the front page only, was 3.6 on a scale from 1 to 5 (1 = very unlikely and 5 = very likely). Participants were slightly more likely to pick up the leaflet in Treatment 1 (which did not contain site branding on the front page) compared to the control (Figure 4); this was weakly statistically significant. There was no difference between the control and Treatment 2 (which did contain site branding, but with a different title and image to the control). Put another way, 68% of participants answered ‘likely’ or ‘very likely’ in Treatment 1, while only 61% of people in the control and in Treatment 2 did so.



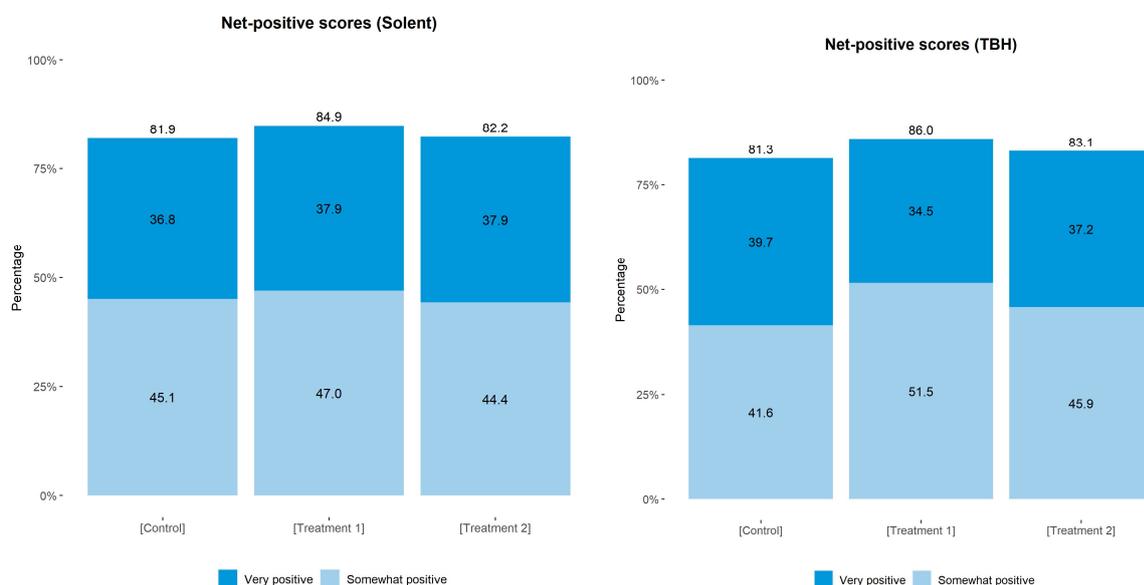
**Figure 4.** Intent to pick up the leaflet (percentage of people who answered ‘likely’ or ‘very likely’). The panel on the left shows results for the Bird Aware Solent leaflets, and the right Thames Basin Heaths.

This means there is some evidence that the front page without site branding is slightly more appealing to dog-walkers. This was the case for both Bird Aware Solent and Thames Basin Heaths branding. While the differences here are relatively modest, we note that relatively few respondents would tend to select the extreme options on a 5-point Likert scale in response to this type of question, and as such, modest variations around the mean score are not entirely trivial.

Regarding demographic factors, we did not observe any significant differences in intent across gender or age groups. Unsurprisingly, participants self-identifying ‘very much’ as a nature lover gave higher scores on average.

### 1.3.3 Additional outcomes

People perceived all the leaflets positively (mean 4.22 on a scale from 1 = very negative to 5 = very positive). Participants perceived Treatment 2 leaflets slightly more positively than the control; this was a weakly statistically significant difference, while there was no difference between Treatment 1 and the control. 85% of participants in Treatment 1 gave a rating of ‘positive’ or ‘very positive’, compared to 82% in the control, and 83% in Treatment 2 (Figure 5). As Treatments 1 and 2 only differed in the front cover, this suggests that the front contributes to the overall tone of the leaflet - though these differences are small, so we caution not to over-interpret these findings.



**Figure 5.** Perceived positivity of the leaflet towards dog-walkers (percentage of people who answered ‘positive’ or ‘very positive’). The panel on the left shows results for the Bird Aware Solent leaflets, and the right Thames Basin Heaths.

The perceived usefulness of the leaflets scored highly on average too (mean 4.20 on a scale from 1 = not at all useful to 5 = very useful). However, there were no differences between either of the treatments and the control.

In Appendix 4, we provide results for people's perceived positivity and usefulness of separate components of the leaflets.

We also asked participants whether there were any parts of the leaflet they found annoying, and whether they had any additional comments. We briefly summarise these open-text responses in Appendix 5.

Finally, we recorded how long participants spent on the screens displaying the leaflet. We summarise these results in Appendix 6.

### 1.3.4 Conclusions

This trial gave strong evidence that leaflets increased participants' comprehension of wildlife disturbance relative to the baseline level of people who had not seen a leaflet. This reinforces the conclusion from our Explore work that low awareness of what constitutes wildlife disturbance could be a barrier to behaviour change, and suggests that leaflets could be a useful tool to encourage responsible recreation.

The use of leaflets raises two key issues, which we address in section 2 below and in the field trial component of this project.

- Firstly, leaflets will only be effective if people actually pick up and read them. In the online trial, participants were not 'forced' to read the leaflet as they could stop taking part in the trial any time. We did not incentivise participants to answer the comprehension questions correctly, as is commonly done in similar online trials, as a quick and imprecise reading of the leaflet more closely mimics how people would be likely to read it in the real world, but nonetheless we recognise that seeing it online is not the same decision as picking up and reading a leaflet in the real world. In section 2 we provide some recommendations for how to optimise leaflet delivery.
- Secondly, increased comprehension does not necessarily translate into changed behaviour, for example due to existing routines that are hard to shift (e.g. people may automatically take the same route every day) or due to competing motivations (e.g. people may prefer wildlife-sensitive sites for other reasons). For this reason, we recommend a two-pronged approach, complementing the leaflets with a physical intervention designed to change behaviour directly. In protocol for the field trial, we provide detailed instructions for how to test the effectiveness of our recommended solution (pawprint signage plus a dog-friendly trail network).

Given that leaflets seem to be effective in raising awareness, which version should be used? This trial showed that all versions of the leaflets were equally effective in improving people's comprehension, and perceived to be equally useful by participants. There was some evidence that the front cover is particularly important, so we recommend fine-tuning this in any further leaflet design.

Specifically, the leaflet versions with less site-specific branding and more dog emphasis on the front cover performed slightly better in terms of participants' stated intent to pick up the leaflet and their perceived positivity of the message. We also note that the findings are consistent for each site-specific version of the leaflet, suggesting that the differences between treatment and control are less due to the branding from a particular site but instead the more general emphasis on relevance to dog-owners.

This is consistent with our Explore findings (perceived opposition between dog-walkers and people/organisations focused more on bird and wildlife interests), as well as behavioural science research showing that conservation messaging is more effective when tailored to people's identities and interests.<sup>1</sup> We would therefore recommend incorporating this finding into the design of future leaflets, if acceptable to all stakeholders.

## 2. Leaflet delivery in the field

### 2.1 Behavioural insights to increase leaflet uptake

The online trial showed that all of the leaflet versions improved people's comprehension relative to those who had not seen a leaflet. The key next step, then, is to increase the likelihood that people will pick up and read leaflets in the field. Table 2 provides a curated list of behaviourally-informed ideas that could be implemented in the field, and monitored to see how many leaflets are taken.

**Table 2.** Recommendations for behaviourally-informed interventions to optimise leaflet delivery in the field.

Behavioural insight	Evidence	Suggestions for on-site leaflet delivery
We are often motivated by receiving an incentive, even if it has low monetary value	People were more willing to give money in a workplace donation day when the ask was accompanied by free sweets <sup>2</sup>	Leaflet dispensers could be accompanied by low-cost incentives for dog owners, such as: <ul style="list-style-type: none"> <li>• Free dog-poo bags (which could also have a message printed on the bag: see section 2.3 below)</li> <li>• Free dog biscuits</li> </ul>
Our attention is drawn to elements of our environment that are salient and prominent	Green footsteps leading up to bins resulted in more people using the bins and less litter on the street <sup>3</sup>	Make leaflet dispensers on-site stand out using: <ul style="list-style-type: none"> <li>• Pawprint markers on the ground leading up to them<sup>4</sup></li> </ul>

<sup>1</sup> Rare and The Behavioural Insights Team (2019). [Behaviour Change for Nature](#)

<sup>2</sup> The Behavioural Insights Team (2013). [Applying Behavioural Insights to Charitable Giving](#)

<sup>3</sup> <https://inudgeyou.com/en/green-nudge-nudging-litter-into-the-bin/>

<sup>4</sup> Note that pawprint markers on the ground are also the basis of this project's field trial, encouraging visitors at path junctions to choose a path through a non-sensitive area rather than an area where wildlife may be disturbed.

		<ul style="list-style-type: none"> <li>• Eye-catching dog-related imagery on the dispenser itself</li> <li>• Useful features provided next to the dispenser such as a boot-scraper or a map of dog-friendly paths</li> </ul>
Habits are deeply ingrained, but easier to shift at moments of change in people's lives	People who received leaflets for a cycle-share scheme were four times likely to sign up when they had just moved into the area <sup>5</sup>	<p>Target people who have just moved into the area or who have just got a new dog, as they will be forming new dog-walking habits. Provide leaflets in:</p> <ul style="list-style-type: none"> <li>• New residents' packs in housing developments or local estate agents' offices</li> <li>• Part of a dog-owners' 'gift pack' from the local authority or another appropriate messenger</li> <li>• At pet shops, kennels and vets</li> </ul>
We are more receptive to messages when they are given by people who we identify with, or who are figures of authority	Students without a family history of university education were more likely to apply when they received a letter from a student like them <sup>6</sup>	<p>Dog-owners may be more receptive to the leaflet if they receive it from the following messengers, rather than from a perceived conservation-oriented group:</p> <ul style="list-style-type: none"> <li>• Vets</li> <li>• Other dog-owners</li> <li>• From their children, if handed out at school</li> </ul> <p>(The leaflets do not necessarily have to be delivered in person by these messengers; instead, a message (and image of the messenger) could be included on a leaflet dispenser.)</p>
Behaviour change is easier to achieve when the desired action is similar to something we already do	People are more likely to drink reduced-sugar soft drinks of the same brand than to switch to a different drink entirely <sup>7</sup>	<p>Deliver the leaflet via channels the audience is already using, so they don't have to go out of their way to pick up a leaflet:</p> <ul style="list-style-type: none"> <li>• An insert in a dog magazine</li> <li>• Handed out in pet shops or vets</li> <li>• An online version posted on social media</li> <li>• A leaflet dispenser in the dog food section of a local supermarket (or handed out along with dog food purchases)</li> </ul>

<sup>5</sup> Kirkman (2019). [Free-riding or discounted riding? How the framing of a bike share offer affects offer redemption](#). Journal of Behavioral Public Administration 2(2)

<sup>6</sup> The Behavioural Insights Team (2017). [Encouraging People into University](#)

<sup>7</sup> <https://www.bi.team/blogs/sugaring-the-bill-why-lower-revenue-from-the-sugar-tax-is-probably-a-good-thing/>

## 2.2 Measuring effectiveness

An important part of the behavioural insights approach is collecting data to find out whether an intervention works as expected, ideally via a randomised controlled trial (RCT) where some groups randomly receive the intervention and others do not. In the case of leaflet delivery, it is difficult to run an RCT or similar trial, as we do not have a clear comparison point for baseline or control leaflet delivery against which we can measure the effect of the intervention. Instead, we suggest measuring the following key indicators that reflect leaflet uptake:

- Number of leaflets taken from dispensers
- Number of people visiting relevant websites mentioned in the leaflet
- Number of social media likes, tweets, new followers, etc, of groups, hashtags and so on mentioned in the leaflet

## 2.3 Additional messaging approaches

A key message from the leaflet, for example that birds flying away constitutes wildlife disturbance, or a key action emphasised in the leaflet, such as avoiding sensitive areas, could also be delivered separately, in channels other than leaflets. These could include:

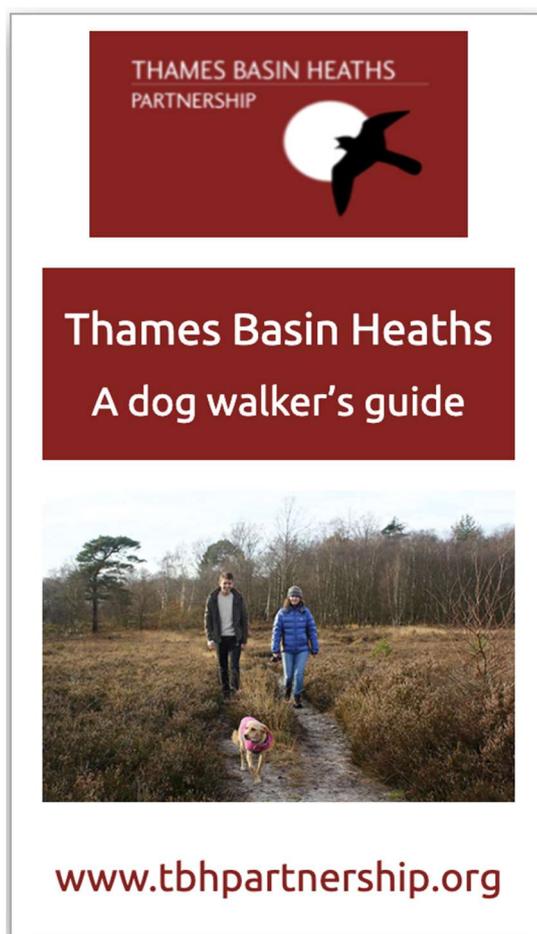
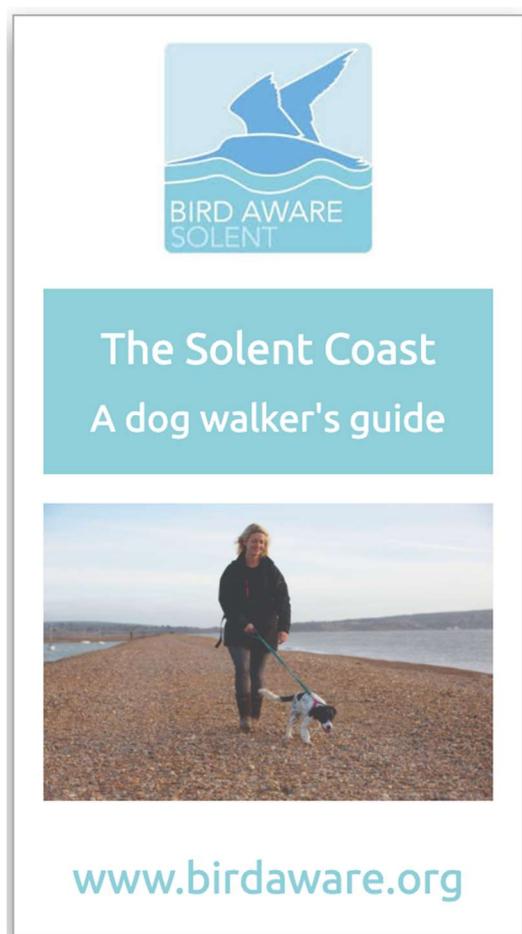
- A message printed on free dog poo bags, dog bandanas, or other small items that are useful or desirable for dog owners (behavioural insight: using incentives)
- Feature a new message displayed on-site (e.g. on a noticeboard or rangers' 'A-board') every week or every month (behavioural insight: our attention is drawn to novel features)
- Hold a competition for dog-walkers to write their own message encouraging responsible recreation, which will then be featured on one of the items in the point above (behavioural insights: harnessing social status of winning the competition; the act of trying to persuade others to change their behaviour is often an effective way to persuade ourselves)
- Encourage dog-walkers to make a pledge on social media about specific actions they will take; this could be in conjunction with a prize draw, and participants could get extra points if their friends make pledges too (behavioural insights: we are more likely to change our behaviour if we make a public commitment to do so; encouraging people to state when and how they will take the specific actions will help them follow through; prize draw provides an incentive)

## Appendix 1: leaflets tested in the online trial

The pages are presented here in the order in which participants saw them. After seeing the front cover, participants were asked 'How likely would you be to pick up this leaflet?' before they went on to see the rest of the leaflet. Each participant saw either the Bird Aware Solent version or the Thames Basin Heaths version, but not both; we simply present both side-by-side here for comparison.

### Control

#### Front cover



# Checklist

<h2 style="margin: 0;">Keep your dog happy</h2>	<h2 style="margin: 0;">Keep your dog safe</h2>	<h2 style="margin: 0;">Keep your dog happy</h2>	<h2 style="margin: 0;">Keep your dog safe</h2>
<p>Our local landscape has so much to offer – for ourselves and our canine friends.</p>		<p>Our local landscape has so much to offer – for ourselves and our canine friends.</p>	
<p>Keeping your dog engaged helps with their behaviour and more importantly keeps them happy!</p> 	<p>Adders have a clear V pattern running the length of their body. They only attack when provoked. If your dog is bitten, seek veterinary attention.</p> 	<p>Keeping your dog engaged helps with their behaviour and more importantly keeps them happy!</p> 	<p>Adders have a clear V pattern running the length of their body. They only attack when provoked. If your dog is bitten, seek veterinary attention.</p> 
<p>Play to your dog's breeding – provide games that engage them suitably without threatening other animals or damaging the landscape.</p> 	<p>It's not just bulls that deserve space and respect – cows (especially with calves) and other herding animals can feel threatened by dogs.</p> 	<p>Play to your dog's breeding – provide games that engage them suitably without threatening other animals or damaging the landscape.</p> 	<p>It's not just bulls that deserve space and respect – cows (especially with calves) and other herding animals can feel threatened by dogs.</p> 
<p>Take toys on your walks – your dog will be better engaged and more likely to stay close.</p> 	<p>A cliff does not need to be big to present a threat. Bear in mind changes in altitude with your walk and that an eager dog may not spot a drop.</p> 	<p>Take toys on your walks – your dog will be better engaged and more likely to stay close.</p> 	<p>A cliff does not need to be big to present a threat. Bear in mind changes in altitude with your walk and that an eager dog may not spot a drop.</p> 
<p>Train your dog new things on your walks – variety is the spice of life for dogs as well as their owners!</p> 	<p>Coastlines can harbour deep mud which can trap a dog or human and can be hidden by a layer of sand. Do not risk yourself if your dog gets stuck – get help.</p> 	<p>Train your dog new things on your walks – variety is the spice of life for dogs as well as their owners!</p> 	<p>Waterways can harbour deep mud which can trap a dog or human and can be hidden by a layer of sand. Do not risk yourself if your dog gets stuck – get help.</p> 

# Inside

<h2 style="margin: 0;">Threats to birds</h2>	<h2 style="margin: 0;">The Bird Aware Coastal Code</h2>	<h2 style="margin: 0;">Value of birds</h2>
<p>Disturbance of the birds can have a profound impact. Competition for limited resources means survival is tough enough for the birds without any human or canine intervention.</p>		
<p>Small changes make a big difference – and don't have to interfere with your enjoyment of the Solent coast. Why not play your part by following these simple suggestions:</p>		
<p>The Solent is of worldwide importance for birds.</p>		
<p>Please spare a thought for the birds in the landscape you enjoy. Give them a wide berth and consider:</p>	<ul style="list-style-type: none"> <li>• Look out for birds feeding or resting on the coast</li> <li>• Take care not to disturb them</li> <li>• Move further away if birds become alert and stop feeding</li> </ul>	<p>Every winter over 125,000 birds return to the Solent from as far as the Arctic. They come to feast on the abundant marine worms, shellfish and plants found on this sheltered coastline.</p>
<p>The calories in a worm are minimal, and can take considerable effort for a bird to catch. Flailing a dog expends the energy gained in an instant.</p> 	<p>Only a few hours a day are available for birds to feed on the coastline – disturbance limits their time to feed and can scare their food away.</p> 	<p>Overwintering birds include internationally important numbers of eight species, and national important numbers of a further eight.</p> 
<p>Many birds overwintering in the Solent are globally threatened – the black-tailed godwit for example – and need our help.</p> 	<ul style="list-style-type: none"> <li>• Stay on paths where they exist</li> <li>• Always follow requests on signs</li> <li>• Exercise your dog away from coastal birds to avoid disturbing them</li> </ul>	<p>Three areas of the Solent have been designated as Special Protection Areas (SPAs) because of bird populations.</p> 
<p>Keep your dog in sight and on a short lead if you cannot rely on its obedience</p> <p>Please clean up after your dog – place bagged waste in any bin</p> <p>Tell your friends and family about Bird Aware Solent</p>		<p>No alternative sites exists locally or regionally for these rare birds – the Solent is an irreplaceable habitat vital to their survival</p> 

### Threats to birds

Disturbance of the birds can have a profound impact. Competition for limited resources means survival is tough enough for the birds without any human or canine intervention.

Please spare a thought for the birds in the landscape you enjoy. Give them a wide berth and consider:

The calories in a worm are minimal, and can take considerable effort for a bird to catch. Feeding a dog expends the energy gained in an instant.



From March to mid-September, rare birds will be raising the next generation. They all nest on the ground (or very close to it) and are extremely vulnerable to disturbance



Many birds spending the summer in the Heaths are locally threatened – the nightjar for example – and need our help.



## The TBHP Heathland Code

Small changes make a big difference – and don't have to interfere with your enjoyment of the Thames Basin Heaths. Why not play your part by following these simple suggestions:

- Look out for birds feeding or resting on the heaths
- Take care not to disturb them
- Move further away if birds become alert and stop feeding



- Stay on paths where they exist
- Always follow requests on signs and avoid military training
- Exercise your dog away from heathland birds to avoid disturbing them



- Keep your dog in sight and on a short lead if you cannot rely on its obedience
- Please clean up after your dog – place bagged waste in any bin
- Tell your friends and family about the Thames Basin Heaths partnership



### Value of birds

The Thames Basin Heaths are of worldwide importance for birds.

From the beginning of March to mid-September, the rare woodlark, nightjar and Dartford warbler, and the more common chiffchaff, willow warbler and stonechat, will be raising the next generation.

Summering birds include internationally important numbers of multiple species and nationally important numbers of more.



Many areas in Thames Basin Heaths have been designated as Special Protection Areas (SPAs) because of bird populations



No alternative sites exist locally or regionally for these rare birds – the Thames Basin Heaths is an irreplaceable habitat vital to their survival



Back

## Key contacts

Check the Council for your missing dog

[www.gov.uk/check-council-missing-dog](http://www.gov.uk/check-council-missing-dog)  
Or use this QR code: 

Find a vet

[findavet.rcvs.org.uk/home/](http://findavet.rcvs.org.uk/home/)  
Or use this QR code: 

Emergency Services

Do NOT risk your personal safety if your dog gets into danger – call:  
999 for emergencies and the Coastguard  
101 for non-urgent Police enquiries

About Bird Aware Solent

Bird Aware is a partnership of local councils and conservation bodies around the Solent. Our aim is to help people enjoy the coast without disturbing the thousands of birds that overwinter here.

Please feel free to contact us:  
w: [www.birdaware.org](http://www.birdaware.org)  
e: [info@birdaware.org](mailto:info@birdaware.org)  
t: 01962 8332235

Follow us online – just look up Bird Aware Solent





## Key contacts

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999 for emergencies  
101 for non-urgent Police enquiries

About Thames Basin Heaths Partnership

Thames Basin Heaths Partnerships is a partnership of local councils and conservation bodies around the Thames Basin Heaths. Our aim is to help people enjoy the heaths without disturbing the thousands of birds that spend the summer here.

Please feel free to contact us:  
w: [www.tbhpartnership.org.uk](http://www.tbhpartnership.org.uk)  
e: [tbhpartnership@naturalengland.org.uk](mailto:tbhpartnership@naturalengland.org.uk)  
t: 01483 721505

Follow us online – just look up Thames Basin Heaths Partnership.





# Treatment

Front cover: Treatment 1



Top tips for winter walks



Top tips for summer walks



Front cover: Treatment 2



BIRD AWARE  
SOLENT

**Top tips for winter walks**



[www.birdaware.org](http://www.birdaware.org)

THAMES BASIN HEATHS  
PARTNERSHIP



**Top tips for summer walks**



[www.tbhpartnership.org](http://www.tbhpartnership.org)

Checklist

**90% of dog walkers we speak to are nature lovers.**

We are as well.

Please join us in protecting the wildlife we all love.

**Keep your dog happy & safe**

- Keep clear of roads
- Avoid sticky mud and sharp shells
- Check for ticks after your walk
- Play with toys and try new areas - take a look at our suggestions overleaf!



**Are you a nature lover too?**

**Nature-loving dog walkers**

- **Never let their dog close to birds or wildlife - even when they can fly away.**
- Keep their dog close to paths.
- Use a lead around livestock or when signs require it.
- Keep their dog in sight when it's off lead.
- Are considerate of other people who may not be comfortable around dogs.
- Bag and bin their dog's poo - in ANY public bin.



**90% of dog walkers we speak to are nature lovers.**

We are as well.

Please join us in protecting the wildlife we all love.

**Keep your dog happy & safe**

- Keep clear of roads and any military training
- Reduce the risk of fire by never discarding cigarettes, bringing BBQs or lighting fires
- Avoid adders and ticks in the heather - check after walks
- Play with toys and try new areas - take a look at our suggestions overleaf!



**Are you a nature lover too?**

**Nature-loving dog walkers**

- **Never let their dog close to birds or wildlife - even when they can fly away.**
- Keep their dog close to paths.
- Use a lead around livestock or when signs require it.
- Keep their dog in sight when it's off lead.
- Are considerate of other people who may not be comfortable around dogs.
- Bag and bin their dog's poo - in ANY public bin.



Inside

### Protecting birds protects the Solent



Some favourite birds in the Solent are the dunlin and the oystercatcher - have you seen them?

These wintering birds fly in from as far as the Arctic to feed on our shores



They can only eat when the tide is right - but a bird in flight can't eat at all

*We cannot eat when we fly,  
Every time a dog runs by,  
So on the path is where to stay,  
or feeding birds will fly away*

Their numbers dropped over recent years - and if we continue to lose them, this area might lose its protected status



### Lead your dog somewhere new

Follow our **dog-friendly trails**  
Look out for the paw-prints!



Find **new smells**  
There's plenty to sniff along our network of paths

Special Protection Areas (SPA) in the Bird Aware Solent region

Solent & Southampton Water
 Portsmouth Harbour
 Chichester and Langstone Harbours





Follow us on social media!  
[@BirdAwareSolent](#)

Tell us what being a **#solentnaturelover** means to you, and how you help protect our precious wild spaces - and we'll enter you into our monthly **prize draw**





### Explore new places

There are lots of great places to walk with your dog around the Solent. Here are some of our favourites - which will you try first?

1. **Royal Victoria Country Park**, SO31 5GA - dog washing facilities, toilets, café and parking
2. **Manor Farm Country Park**, SO31 1BH - toilets and paid parking
3. **Alver Valley Country Park**, PO13 8LU - toilets and parking
4. **Appley Park**, Ryde, IOW, PO33 1QX - toilets, parking and nearby cafes
5. **Fort Victoria Country Park**, IOW, PO41 0RR - toilets, free parking and café

My next walk will be on \_\_\_\_\_ (date)  
and I will go to \_\_\_\_\_ (site)



Chris Revnolds

### Protecting birds protects the heaths



Some favourite birds in Thames Basin Heaths are the nightjar and the Dartford warbler

These birds fly from as far as Africa to breed here during the spring and summer



They all nest on or close to the ground and are extremely vulnerable to disturbance

*"You can help avoid disturbance and give my chicks the best chance of survival by sticking to paths and keeping dogs out of vegetation"*

No birds could mean no protection from development



### Lead your dog somewhere new

Follow our **dog-friendly trails**  
Look out for the paw-prints!



Find **new smells**  
There's plenty to sniff along our network of paths

Key

Thames Basin Heaths Special Protection Area heathland and forestry
 Greenspace on your doorstep entry





Follow us on social media! [@TBHPartnership](#) and join **1000 other members in our dog-walking community group Heathland Hounds**.  
Tell us what being a **#TBHnaturelover** means to you, and how you help protect our precious wild spaces - and we'll enter you into our monthly **prize draw**





### Explore new places

There are lots of great places to walk with your dog around Thames Basin Heaths. Here are some of our favourites - which will you try first?

(On the map):

- 37 = Nishes Wood at Crookham Park, GU52 8TJ
- 38 = Wellesley Woodlands, GU11 2HL
- 39 = Lakeside Nature Reserve, GU12 5AA
- 40 = Farnham Park, GU9 OAU
- 41 = Rowhill Nature Reserve, GU11 3BD

My next walk will be on \_\_\_\_\_ (date)  
and I will go to \_\_\_\_\_ (site)



Chris Revnolds

Back

<div data-bbox="225 315 639 472" style="background-color: #00a0c0; color: white; padding: 10px; text-align: center;"> <h2>Key contacts and further information</h2> </div> <div data-bbox="225 501 639 629" style="background-color: #00a0c0; color: white; padding: 5px;"> <p><b>Check the Council for your missing dog</b></p> <p><a href="http://www.gov.uk/check-council-missing-dog">www.gov.uk/check-council-missing-dog</a> Or use this QR code: </p> </div> <div data-bbox="225 640 639 768" style="background-color: #00a0c0; color: white; padding: 5px;"> <p><b>Find a vet</b></p> <p><a href="http://findavet.rcvs.org.uk/home/">findavet.rcvs.org.uk/home/</a> Or use this QR code: </p> </div> <div data-bbox="225 779 639 981" style="background-color: #00a0c0; color: white; padding: 5px;"> <p><b>Emergency Services</b></p> <p>Do NOT risk your personal safety if your dog gets into danger – call:</p> <p>999 for emergencies and the Coastguard 101 for non-urgent Police enquiries</p> </div> <div data-bbox="225 992 639 1171" style="padding: 5px;">  <p>For more information about keeping your dog happy and safe in natural areas in England, look for the Dog Walking Code at <a href="http://thekennelclub.org.uk">thekennelclub.org.uk</a></p> </div> <div data-bbox="225 1182 639 1272" style="padding: 5px;"> <p>For more places to visit with your dog around the Solent, visit: <a href="http://solent.birdaware.org/VisitTheSolent">solent.birdaware.org/VisitTheSolent</a></p> </div>	<div data-bbox="715 315 1129 472" style="background-color: #800000; color: white; padding: 10px; text-align: center;"> <h2>Key contacts and further information</h2> </div> <div data-bbox="715 501 1129 629" style="background-color: #800000; color: white; padding: 5px;"> <p><b>Check the Council for your missing dog</b></p> <p><a href="http://www.gov.uk/check-council-missing-dog">www.gov.uk/check-council-missing-dog</a> Or use this QR code: </p> </div> <div data-bbox="715 640 1129 768" style="background-color: #800000; color: white; padding: 5px;"> <p><b>Find a vet</b></p> <p><a href="http://findavet.rcvs.org.uk/home/">findavet.rcvs.org.uk/home/</a> Or use this QR code: </p> </div> <div data-bbox="715 779 1129 981" style="background-color: #800000; color: white; padding: 5px;"> <p><b>Emergency Services</b></p> <p>Do NOT risk your personal safety if your dog gets into danger – call:</p> <p>999 for emergencies 101 for non-urgent Police enquiries</p> </div> <div data-bbox="715 992 1129 1171" style="padding: 5px;">  <p>For more information about keeping your dog happy and safe in natural areas in England, look for the Dog Walking Code at <a href="http://thekennelclub.org.uk">thekennelclub.org.uk</a></p> </div> <div data-bbox="715 1182 1129 1272" style="padding: 5px;"> <p>For more places to visit with your dog around Thames Basin Heaths, visit: <a href="https://www.tbhpartnership.org.uk/">https://www.tbhpartnership.org.uk/</a></p> </div>
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## Appendix 2: text from online experiment

### Control and treatment groups

#### Screen 1

Welcome and thanks for participating in this survey. Your contribution will help natural areas in England develop strategies to ensure you and your dogs enjoy the areas while wildlife is protected. This is your chance to have your say about what matters to you.

We realise that due to coronavirus, your current visits to natural areas may be different to normal. Please think about your *typical* visits when answering this survey.

*Task:* You will be shown four sides of a leaflet. You can look at this leaflet for as long as you like. We are then going to ask you some questions about the information you saw.

*Duration:* The task should take about 10 minutes to complete and requires your attention, so please only participate if you can dedicate this time!

Please note that you cannot go back to previous sections.

#### Screen 2

How many days per week do you walk your dog? (Count the times *you* go out with your dog, not someone else in your household.) [Every day (7 days per week) / 5-6 days per week / 3-4 days per week / 1-2 days per week / Never]

For how much of your walk do you typically let your dog off-lead? [1 = none, 2 = a short time, 3 = about half of the walk, 4 = most of the walk, 5 = all]

How much do you identify as a nature lover? [1 = not at all, 5 = a lot]

#### Screen 3

Leaflet front

#### Screen 4

How likely would you be to pick up this leaflet? [1 = very unlikely, 5 = very likely]

#### Screen 5

Leaflet checklist

#### Screen 6

Leaflet inside

**Screen 7**

Leaflet back

**Screen 8**

According to the leaflet, are the following behaviours examples of wildlife disturbance? [yes / no / don't know]

- Birds not singing when a person or dog comes near [correct: N]
- Birds flying away when a person or dog comes near [correct: Y]
- A person or dog chasing birds but not catching any [correct: Y]
- A person or dog catching a bird but not injuring it [correct: Y]

According to the leaflet, which of the following are guidelines for dog-walkers? [yes / no / don't know]

- Always keep a dog on a lead [correct: N]
- Never let a dog go out of its owner's sight [correct: Y]
- Put dog poo in any kind of bin [correct: Y]
- Stick to the main paths when with a dog [correct: Y]

**Screen 9**

Imagine you are walking your dog next week in [Solent / TBH]. How important would the following be to you? [1 = very unimportant, 5 = very important]

- Calling my dog back if it goes out of sight
- Sticking to the main paths
- Taking an interest in birds or other wildlife
- Ensuring my dog doesn't make birds fly away
- Bringing toys for my dog on our walk
- Trying new paths
- Putting my dog's poo in any bin
- Checking my dog for ticks after the walk

**Screen 10**

How positive do you think the overall message of the leaflet is towards dog-walkers? [1 = very negative, 5 = very positive]

How positive do you think the message in each part of the leaflet is towards dog-walkers? [1 = very negative, 5 = very positive]

- The [Bird Aware Solent / Thames Basin Heaths] brand
- The images in the leaflet [show all]
- The information about wildlife
- The checklist for 'dog-loving nature lovers' [treatment only]
- The checklist for 'keeping your dog happy and safe'
- The maps [treatment leaflet only]

[show each component of the leaflet alongside the relevant question]

How useful did you find the leaflet overall? [1 = not at all useful, 5 = very useful]

How useful did you find each of the following? [1 = not at all useful, 5 = very useful]

- The information about wildlife
- The checklist for 'dog-loving nature lovers' [treatment leaflet only]
- The checklist for 'keeping your dog happy and safe'
- The maps [treatment leaflet only]

[show each component of the leaflet alongside the relevant question]

### Screen 11

Are there any parts of the leaflet that you found annoying?

[free text]

### Screen 12

This is the end of the survey. Thanks for participating!

If you have any feedback, please enter it in the box below.

Please click 'submit' to return to the panel website.

## No-leaflet group

Participants in this experimental condition saw only Screens 1, 2, 8 and 9 above.

The comprehension questions on Screen 8 were phrased as 'To the best of your knowledge...' rather than 'According to the leaflet...'.

The mention of the specific site was omitted on Screen 9.

## Appendix 3: comprehension results, broken down by question

The tables below show the results for each comprehension question (mean percentage of respondents who answered the question correctly). People in the no-leaflet group scored significantly worse than the control on questions 2 and 8 (indicated by \*\*). We note that question 2 is the key component of comprehension that we want to improve, while question 8 is the target behaviour identified by the site teams as the priority, and which will be addressed in the field trial.

Question 1. Birds not singing when a person or dog comes near

	Solent	Thames Basin Heaths
--	--------	---------------------

Control	43.60%	42.65%
Treatment	45.40%	47.35%
No leaflet	49.40%	49.25%

## Question 2. Birds flying away when a person or dog comes near

	Solent	Thames Basin Heaths
Control	71.40%	71.01%
Treatment	75.32%	67.94%
No leaflet	55.71% **	55.74% **

## Question 3. A person or dog chasing birds but not catching any

	Solent	Thames Basin Heaths
Control	79.60%	76.05%
Treatment	76.40%	76.75%
No leaflet	72.00%	71.75%

## Question 4. A person or dog catching a bird but not injuring it

	Solent	Thames Basin Heaths
Control	76.00%	72.27%
Treatment	71.90%	73.87%
No leaflet	74.60%	74.17%

## Question 5. Always keep a dog on a lead

	Solent	Thames Basin Heaths
Control	33.14%	44.12%
Treatment	39.44%	42.62%
No leaflet	39.34%	39.62%

## Question 6. Never let a dog go out of its owner's sight

	Solent	Thames Basin Heaths
Control	89.71%	85.71%
Treatment	90.11%	90.21%
No leaflet	91.51%	90.91%

## Question 7. Put dog poo in any kind of bin

	Solent	Thames Basin Heaths
Control	62.10%	63.66%
Treatment	66.70%	64.96%
No leaflet	61.70%	65.56%

## Question 8. Stick to the main paths when with a dog

	Solent	Thames Basin Heaths
Control	86.10%	82.98%
Treatment	85.70%	84.68%
No leaflet	68.80% **	68.28% **

## Appendix 4: perceived positivity and usefulness of leaflet components

The tables below show people's how positive and how useful participants perceived separate components of the leaflet to be. We do not provide any statistical analyses as they would be underpowered (i.e. we would not be able to detect differences between the control and treatment groups, if such differences actually exist).

### Positivity

The numbers given are the mean scores on the 1-5 answer scale, where 1 = very negative and 5 = very positive.

#### Information about wildlife

	Solent	Thames Basin Heaths
Control	4.07	4.029
Treatment	3.985	4.155

#### Checklist [guidelines for behaviour]

	Solent	Thames Basin Heaths
Control	4.33	4.29
Treatment	4.33	4.367

## Images

	Solent	Thames Basin Heaths
Control	4.33	4.35
Treatment	4.245	4.277

## Usefulness

The numbers given are the mean scores on the 1-5 answer scale, where 1 = not at all useful and 5 = very useful.

## Information about wildlife

	Solent	Thames Basin Heaths
Control	4.36	4.3
Treatment	4.282	4.273

## Checklist [guidelines for behaviour]

	Solent	Thames Basin Heaths
Control	3.99	4.04
Treatment	3.9	3.97

## Appendix 5: open text responses

We collected 1889 free-text responses to the question 'Are there any parts of the leaflet that you found annoying?', and 458 responses to the opportunity on the closing screen to give feedback. Whilst it is beyond the scope of this analysis to carry out a methodical, qualitative analysis of each of these answers, natural language processors offer an opportunity to extract high-level themes and keywords from the texts, and compare them across treatments. The Wordcloud plots and keyword tables below illustrate the most frequent word stems found across control and treatment groups (combined for both Bird Aware Solent and Thames Basin Heaths leaflet versions). We observe largely similar responses across the experimental conditions, with the majority of participants stating that there was nothing about the leaflets that particularly annoyed them.

Control

Treatment 1

Treatment 2

