

PRIORITISING INDIVIDUAL ACTIONS **FOR NATURE BEHAVIOUR CHANGE**

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Summary

There are many actions individuals can take to support biodiversity, but some are easier to persuade people to do. Given the variety of possible actions, identifying behaviours which people are more likely to do – behaviours which are more plastic – can help organisations decide which actions to promote. Campaigns focusing on more plastic behaviours may need fewer resources to successfully change behaviour. This is just one part of the equation, as information about the size of the potential target audience for different behaviours, and their potential ecological impact, will also help organisations determine which behaviours to champion. Here we report on the second part of a larger project by exploring examples of behaviour change across the Wildlife Trusts and the behavioural plasticity of nature-friendly behaviours. More than 70 people across 33 Wildlife Trusts participated in the process.

We focused on 63 individual and group actions which do, or could, have an ecological impact on nature conservation goals. These behaviours were described using a short title and a non-exhaustive list of example actions, which can be viewed in Appendix 3. A combination of surveys and a workshop were used to rate the plasticity of these 63 behaviours, from a scale of 0 (no-one could be persuaded to do this behaviour) to 4 (easiest to persuade people in the UK to do). Few behaviours received any 0 scores (no-one could be persuaded to do this behaviour). In final scoring, the five highest rated behaviours were 'recycle', 'sign a petition', 'feed wildlife', 'provide water for animals', and 'collect litter'. The scores for all 63 behaviours are shown in Figure 4 and Appendix 6.

We will continue this work by estimating the proportion of the UK population who are already doing these 63 behaviours, and how many would be willing to do so. The final part of the project will conduct rapid reviews to evidence the ecological impacts of a selection of highly ranked behaviours. Together, this information can inform decision-making and prioritisation of behaviour change campaigns.

Context

Worldwide declines and losses of biodiversity are caused by the activities, systems and processes of humans¹. Only by changing human behaviours which threaten nature can the global biodiversity crisis be addressed and nature recovery supported^{2–4}. Environmental NGOs (eNGOs) like The Wildlife Trusts play a vital role in encouraging nature-friendly behaviours, which in turn have significant impacts on the natural environment. However, there are many threats and possible interventions, which can make it challenging to prioritise specific nature-friendly behaviours with finite resources. As well as considering the ecological impact of any promoted behaviour, understanding how likely it is that people will change that behaviour – how plastic it is – can help prioritise within many possible actions. Further information about the size of the potential target audience for different behaviours, and potential barriers to behaviour change, will also help organisations determine the overall potential impact of any actions they champion.

At Surrey Wildlife Trust, we are conducting a series of surveys and workshops to:

- 1. Describe the potential ecological impact of different nature-friendly behaviours.
- 2. Evaluate the ease of encouraging behaviour change.
- 3. Determine the potential target audience and barriers for behaviour change.

The first part of this work has already been described <u>here</u>. This report describes the second part of this work; rating the ease of behaviour change. Further work will be described in future reports (Figure 1).



Figure 1: The process for this project. This report describes 'rate ease of behaviour change'.

Behaviour change for biodiversity conservation

Although public facing content uses various terms including 'nature-friendly behaviour', the term most used in academic literature is 'pro-nature behaviour'. What is, and is not, pronature behaviour has been widely debated ⁵, but the definition we used was 'individual and group actions which do, or could, have an ecological impact on nature conservation goals'. Behavioural change focuses on changing choices and actions (rather than understanding or attitudes) using evidence-based insights to shape strategies and policies⁶. Therefore, behaviour change for biodiversity conservation means changing the behaviour of individuals, communities and organisations to support nature conservation goals. While organisational behaviours and rural landholder behaviours are very important in protecting threatened species and biodiversity, this work focuses on actions which individuals take. Nevertheless, it is important to remember that an individual can have multiple identities⁶ (e.g. consumer, voter, investor), including identities which can facilitate broader system change⁷ (e.g. policymaker, procurement manager).

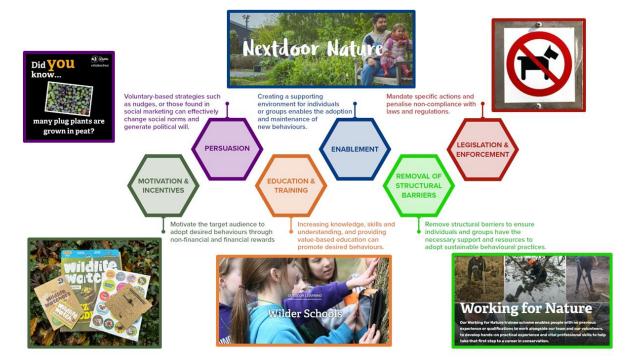


Figure 2: Six key strategies for behaviour change in biodiversity conservation with Wildlife Trust examples. Modified from Brown et al. (2024).

There are many ways of changing behaviour, but a recent evidence review suggested there are six key strategies for biodiversity conservation, all of which have been used by The Wildlife Trusts (Figure 2). The '#hiddenpeat' social media campaign is an example of a persuasive strategy, and encourages people to avoid plants grown in peat and contact garden centres to raise the profile of this issue. The 'Nextdoor Nature' program provided people with advice and support to help local nature, thus is an example of enablement. Legislation and enforcement as a strategy is shown by Yorkshire Wildlife Trust's specific rules about which reserves can be used by dogs, and the associated strategies to tackle rule breaking. Wildlife Trust family members receive a 'Wildlife Watch' starter pack for children, an example of an incentive. Education and training such as Surrey Wildlife Trust's 'Wilder Schools' program increases children's biodiversity knowledge, and enables action for nature

on school grounds. Derbyshire Wildlife Trust's 'Working for Nature' traineeship removes barriers to a nature conservation career for those with no previous experience or qualifications. Many of the most successful behaviour change campaigns use more than one strategy^{8,9}, for example the Working for Nature program included training towards a diploma, creating an enabling environment for trainees to continue working in the sector. Multiple strategies are more effective as changing an individual's behaviour is complex⁹. Unfortunately, the effectiveness of many strategies has not been evaluated⁶, and therefore careful planning and evaluation of any behaviour change program is recommended¹⁰.

Effective behaviour change campaigns identify specific behaviours and audiences to target, then work to understand that audience and the barriers and enablers for the behaviour. before designing an intervention¹⁰. Even with a well-designed behaviour change campaign however, there are differences in how attractive behaviours are to individuals9. Some ecologically impactful behaviours which few people currently do (suggesting high potential for growth) may be unlikely to be widely adopted, limiting the potential ecological impact of a campaign. The likelihood that a behaviour will be adopted, or its 'plasticity', is therefore an important part of behavioural prioritisation¹¹. There are many factors which determine how plastic a behaviour is, such whether a behaviour only has to be done once (e.g. creating a pond) or repeated over time (e.g. maintaining a pond)9. Some pro-nature behaviours are seen as choices where a near-term personal loss is exchanged for an uncertain future environmental gain¹². These behaviours are likely to be less plastic than other nature-friendly behaviours which are aligned with powerful motivators such as profit, convenience or enjoyment¹⁰. For example, some behaviours which could benefit nature can save people time (e.g. light-touch gardening) or provide other benefits (e.g. improved fitness from practical volunteering). This report focuses on the perceptions of staff at The Wildlife Trusts (TWT) to evaluate the behavioural plasticity of 63 behaviours which could be undertaken by individuals in the UK. Details about how the behaviours included in this study were identified are described in the report 'Prioritising individual actions for nature: ecological impacts'.

Rating ease of behavioural change

Survey of the 63 behaviours

A series of posts on The TWT intranet, Wildnet, invited TWT staff to complete an online survey to rate the ease of behaviour change for 63 behaviours. Descriptions of the 63 behaviours are shown in Appendix 1. Individuals who registered to attend the follow up workshop were also emailed an invitation to complete the survey before attending. Participants were instructed to rate each behaviour for how easy it is to persuade people in the UK to do the behaviour, from 0 (no-one could be persuaded to do this behaviour) to 4 (behaviours which it is easiest to persuade people in the UK to do). Behaviours were ranked by the percentage of participants who scored the behaviour as either 3 or 4 - the highest possible scores (Figure 3). Each behaviour was rated by 14-71 people from 24 regional Wildlife Trusts, and there is good agreement between individuals about potential plasticity, particularly among the top and bottom rated behaviours. The full survey is shown in Appendix 2.

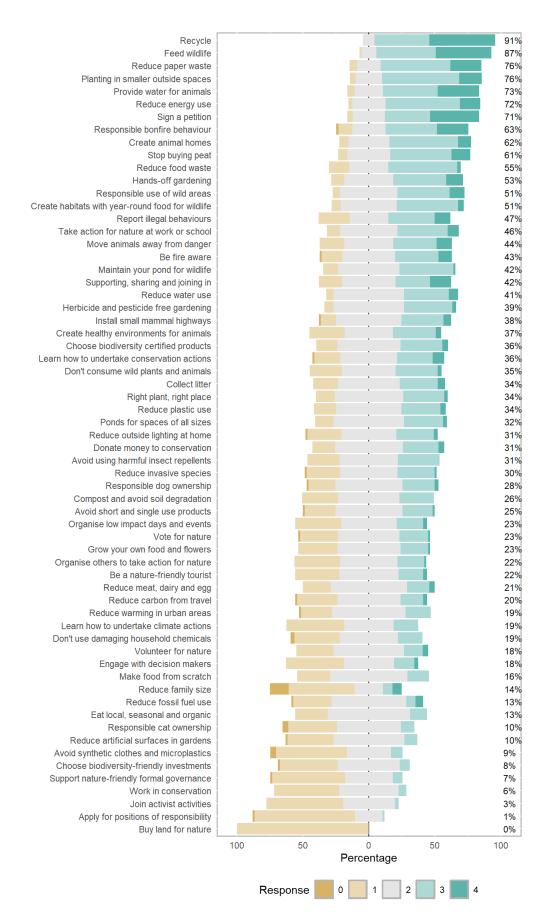


Figure 3: Initial ratings of the 63 behaviours. The percentage on the right-hand side shows the percentage of respondents who rated a behaviour as either a 3 or 4, and therefore considered the behaviour more plastic.

Workshop

39 staff from 24 of the regional Wildlife Trusts responded to a Wildnet post and attended a two-hour workshop to review the survey results. The workshop started by presenting the workshop topic. Next, the survey ratings for the 63 behaviours were shared with participants. Participants were then allocated to one of six breakout rooms to discuss whether any behaviours were more or less easy to change than their ranks suggested. Participants talked about 57 of the 63 behaviours, and suggestions and discussions were shared on a Miro board. Participants discussed the differences between behaviours e.g. habitual vs. occasional behaviours, various influences on and attitudes to behaviours, different audiences, the complexity of messaging for some behaviours, the relationship between the Wildlife Trusts and the behaviours, and the data collection process for this study and potential sources of bias. Facilitators and barriers to behaviour change were also identified and are shown in Table A3.2. More details synthesizing the discussions can be seen in Appendix 3 and the workshop recording is available to view here. To end, a follow up survey was shared with participants, so that they could rerate the behaviours in light of the workshop discussions. The full follow-up survey is shown in Appendix 4.

Post workshop survey

As with the first survey, participants were instructed to rate each behaviour for how easy it is to persuade people in the UK to do the behaviour, from 0 (no-one could be persuaded to do this behaviour) to 4 (behaviours which it is easiest to persuade people in the UK to do). Each behaviour was rated by 24-26 people from 17 Wildlife Trusts. Few behaviours (n=11) received any 0 scores (no-one could be persuaded to do this behaviour). Average postworkshop scores were calculated for each behaviour and used to rank the 63 behaviours by perceived ease of behaviour change (Figure 4). The five highest rated behaviours were 'recycle', 'sign a petition', 'feed wildlife', 'provide water for animals', and 'collect litter'. A breakdown of post-workshop ratings for all 63 behaviours are shown in Appendix 5, and the scores from both surveys are shown in Appendix 6.

Conclusions

The final ratings for all 63 behaviours shown in Figure 4 (and Appendix 5) can be used as a guide for the potential plasticity or ease of behaviour change for TWT programmes. These results may form a useful reference and starting point to identify current areas of strength and confidence within TWT, and potential areas to grow TWT skills and capacity to address specific behaviours. These results should not be considered prescriptive, due to the importance of context and audience when considering behaviour change. Furthermore, these results may not reflect the ease with which other organisations, with different priorities, strategies, and audiences, might enable behaviour change in UK audiences. As can be seen in Figure 3, there is a good agreement between individuals about potential plasticity, particularly among the top and bottom rated behaviours. The ease of behavioural change is, however, just one of the variables that influences the overall impact of any campaign. As described above (Figure 1), this report describes the second part of a larger project, and the results described here should be used in conjunction with the information provided in the rest of this project.

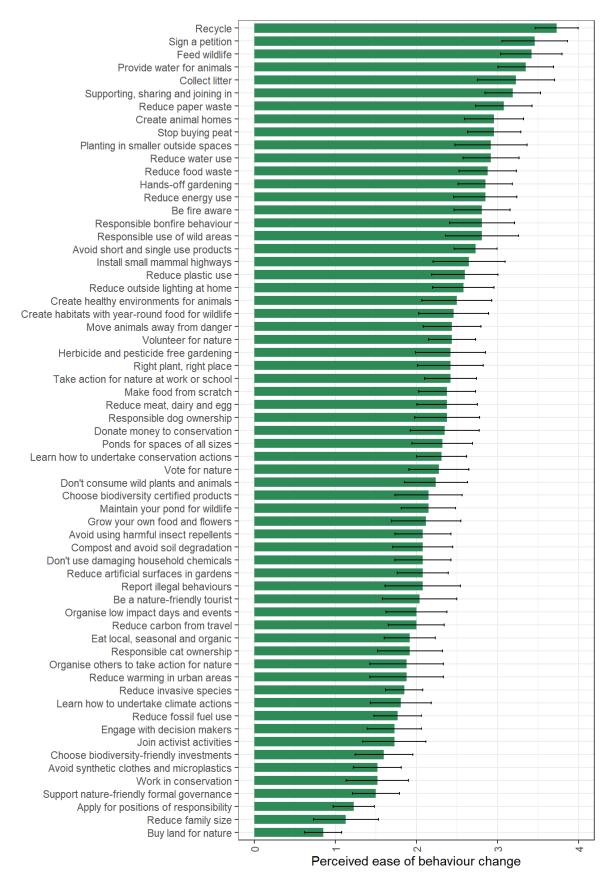


Figure 4: Average ratings of 63 behaviours. Behaviours with higher values are perceived to be more plastic. The error bars show 1 standard deviation in the ratings given. Behaviours with smaller error bars show greater agreement between individuals.

References

- 1. Veríssimo, D. Influencing human behaviour: An underutilised tool for biodiversity management. *Conservation Evidence* **10**, 29–31 (2013).
- 2. Schill, C. *et al.* A more dynamic understanding of human behaviour for the Anthropocene. *Nature Sustainability* **2**,1075–1082 (2019).
- 3. St. John, F. A. V., Edwards-Jones, G. & Jones, J. P. G. Conservation and human behaviour: Lessons from social psychology. *Wildlife Research* **37**, 658–667 (2010).
- 4. Balmford, A. *et al.* Making more effective use of human behavioural science in conservation interventions. *Biological Conservation* **261**, (2021).
- 5. Larson, L. R., Stedman, R. C., Cooper, C. B. & Decker, D. J. Understanding the multi-dimensional structure of pro-environmental behavior. *Journal of Environmental Psychology* **43**, 112–124 (2015).
- 6. Veríssimo, D. *et al.* Changing human behaviour to conserve biodiversity. *Annual Review of Environment and Resources* **49**, 419–448 (2024).
- 7. Amel, E., Manning, C., Scott, B. & Koger, S. Beyond the roots of human inaction: Fostering collective effort toward ecosystem conservation. *Science* **356**, 275–279 (2017).
- 8. Brown, M. et al. Behaviour Change for Achieving the Kunming-Montreal Global Biodiversity Framework Evidence Synthesis. https://shiny.york.ac.uk/CASCADE-BEHAVIOUR-CHANGE (2024).
- 9. Dietz, T., Gardner, G. T., Gilligan, J., Stern, P. C. & Vandenbergh, M. P. *Household Actions Can Provide a Behavioral Wedge to Rapidly Reduce US Carbon Emissions*. *PNAS* **106**, 18452-18456 (2009).
- 10. Rare and The Behavioural Insights Team. Behaviour Change for Nature: A behavioural toolkit for Practitioners. https://www.bi.team/wp-content/uploads/2019/04/2019-BIT-Rare-Behavior-Change-for-Nature-digital.pdf (2019).
- 11. Selinske, M. J. *et al.* Identifying and prioritizing human behaviors that benefit biodiversity. *Conservation Science and Practice* **2**, e249 (2020).
- 12. Clayton, S. & Myers, G. Conservation Psychology: Understanding and Promoting Human Care for Nature. (Wiley and Sons, Oxford, UK, 2015).

Appendix 1: List of 63 behaviours with examples

Apply for positions of responsibility on an environmental platform: Apply for trusteeships, local government roles

Reduce paper waste: Reduce printing, buy second hand books

Report illegal behaviours: Alert authorities of anti-nature behaviour e.g. fly tipping, wildfire,

pollution, persecution

Buy land for nature: Purchase and manage land for biodiversity

Reduce family size: Having fewer children, planning the size of your family

Engage with and advocate for nature-friendly formal governance structures: Contribute to government consultations, advocate for 'biodiversity-friendly' certification, engage with the planning system for nature.

Learn how to undertake climate actions: Attend courses to understand UK climate change impacts and actions to lessen/mitigate the impact

Join activist activities: Demonstrations, sit-ins, walk-outs

Engage with decision makers to encourage them to take action for nature: Engage directly with local / national government, political parties, trade unions, employers, companies. Includes writing to local members of parliament or local government about their environmental policies, issues and solutions, writing to companies about nature-friendly practices, sending 'letters to the Editor'

Sign a petition: Sign petitions which support nature and conservation efforts

Vote for nature: Vote for parties / candidates with strong pro-conservation policies in elections, including local and national politicians, organisation committees and boards, support nature friendly legislation by voting for them when given the opportunity

Don't buy, consume or collect products from plants and animals unless from sustainable sources: Don't buy animal products, coral, exotic pets, don't purchase, consume or harvest wild animals, plants or fungi, don't buy products made from leather and silk

Choose biodiversity certified products: Choose FSC certified paper and sustainably sourced wood, MSC certified seafood, buy biodiversity friendly coffee and chocolate

Eat local, seasonal and organic: Choose organic food, local and seasonal produce

Reduce meat, dairy and eggs: Reduce beef and lamb consumption, eat less meat, reduce dairy, eat plant-based meals, feed pet's insect or vegetarian foods

Stop buying peat: Don't buy peat, ask garden centres what they grow their plants in

Avoid short and single use products: Buy fewer, longer lasting toys, clothes and household items or those made with sustainable materials

Don't use chemicals in the household which are damaging to the environment: *Bleaches and other cleaning products, chemicals on clothes and in personal hygiene products.*

Avoid synthetic clothes and don't use products which contain microplastics: Avoid buying synthetic fabrics and items with microbeads, Hand-wash synthetic clothes and use micro-fibre catching laundry bags

Choose products with less plastic, avoid plastic products: Reduce packaging, use sustainable or reusable packaging materials, Mend or upcycle clothing, furniture and electronics, Reuse or recycle tins, jars, plastic bottles, buy secondhand gifts, donate to and buy from charity shops

Reduce food waste: Use a veg box, plan meals, eat leftovers, use local food waste collection

Reduce water use: Use a water butt instead of sprinklers in the garden or add drought resistant plants, increase water efficiency in the house e.g. adding a cistern displacement device, fix dripping taps, use eco-settings and full loads for washing machine and dishwasher

Make food from scratch: Make your own food from scratch to avoid packaging and palm oil

Reduce energy use: Add draught-proofing to doors and windows, improve insulation, turn the heating down and appliances off at the mains, wash clothes at 30C, turn off lights overnight and when out of the house

Reduce fossil fuel use: Choose a greener car, change to a renewable energy supplier, replace boiler with a heat pump, get solar panels

Reduce carbon from travel: Walk, bike or car share, avoid flights, use public transport, maintain car and drive efficiently, attend meetings remotely rather than in person

Avoid using harmful insect repellents: Avoid using insect repellents and pet tick treatments which contain neonicotinoids

Donate money to conservation: Donate or become a member of nature conservation organisations, make a legacy donation in your will, donate to nature conservation projects

Volunteer for nature: Volunteer for activities which take care of the environment, volunteer for a biodiversity conservation organisation (including non-biodiversity skills e.g. IT, graphic design, fundraising etc.), participate in clean-up events

Work in conservation: Use skills for a nature NGO, consultancy or government position, apply for conservation traineeships

Choose biodiversity-friendly investments: Invest in biodiversity friendly companies and products, and devest from companies and products which are harmful to biodiversity

Be a nature-friendly tourist: Visit and support nature-friendly projects e.g. rewilding sites, choose activities with lower impacts on nature, e.g. canoes rather than jet-skis, be aware of negative impacts e.g. lake algal blooms due to over-capacity sewers in tourist season

Responsible cat ownership: Keep cats in at night, use bell collars etc. to prevent cat predation, provide indoor places where play behaviour can replace predation, walk cats on leads

Responsible dog ownership: Walking on lead in sensitive areas and picking up poo Keep dogs on leads in wild areas and follow on-site signage, pick up or bury poo, walk dogs in a SANG rather than nature reserve

Learn how to undertake conservation actions: Attend a wildlife gardening course, go to talks, read books or watch documentaries about nature conservation issues and solutions

Take action for nature at work or school: Creating wildlife garden, advocating for lower impact foods at the canteen, changing business practices to reduce impact on wildlife

Organise others to take action for nature: *Litter pick, fundraiser for nature NGOs, sponsored walk, beach clean, corporate volunteer day*

Supporting, sharing and joining in: Support those making biodiversity-friendly choices, share stories about nature, join in community actions for nature, tell positive nature stories and support those who are making biodiversity-friendly choices, share posts and articles about conservation on social media

Organise low impact days and events: Provide vegetarian or vegan food at gatherings of friends and family, organise a plastic-free Halloween party, go one day without single use plastic

Collect litter: Take a rubbish bag when walking and collect litter, do a beach clean-up

Herbicide and pesticide free gardening: Practice chemical-free gardening, use companion planting for pest control, Avoid using pesticides, herbicides and synthetic fertilizer

Avoid soil degradation: Create a compost heap or pile in your garden, add compost to soil, rotate annual plants and crops in the vegetable patch

Grow your own food and flowers: *Grow flowers instead of buying, Grow your own food, plant a fruit tree*

Reduce permeable and artificial surfaces in gardens: Use permeable paving, gravel or plants instead of hard driveway or patio, remove plastic grass, plant hedges instead of using fences

Provide water for animals: Create puddling pool for butterflies, Provide water for animals

Hands-off gardening: Leave no mow zones and wild patches ore reduce mowing frequency, don't trim plants in spring or summer, leave sunflower hearts, ivy flowers, hollow stems and dandelions in the garden, don't remove hedges or trees

Create animal homes: Add bat and bird boxes, insect and bee hotels, leave log or leaf piles for animals, add hibernating spaces for hedgehogs, amphibians or reptiles

Create habitats with food for wildlife throughout the year: Plant plants with different flowering or fruiting seasons

Create healthy environments for animals: Clean bird boxes and feeders, change water for birds daily

Feed wildlife: Put up a bird feeder or butterfly feeding table, feed badgers or hedgehogs, create spaces with flowering plants for pollinators

Install features that allow small mammals to move between areas without problems: Add a hedgehog hole to fences

Maintain your pond for wildlife: Add submerged aquatic plants to pond, ensure ponds have a shallow edge for wildlife access

Planting in smaller outside spaces: Create a container garden, plant wildlife-friendly herbs or flowers, plant nighttime flowering plants

Ponds for spaces of all sizes: Create a pond suitable for the space, from a bucket or container pond to wetland

Right plant, right place: Add plants which support local wildlife - bog gardens for wet spaces, coastal gardens near the sea, add bushes and shrubs for nesting birds, plant native trees, spring flowering bulbs, and butterfly host plants, use native wild wildflower seed mixes

Reduce warming in urban areas: Grow plants up building walls to cool them, plant shading trees and shrubs

Reduce outside lighting at home: Dim or reduce nighttime garden lighting, use blackout blinds or curtains

Be fire aware: Don't take BBQS to wild areas, be careful with cigarette disposal to prevent accidental fire

Responsible bonfire behaviour: Check bonfire for hedgehogs, build bonfire the day it will be lit, protect bonfire with chicken wire

Responsible use of wild areas - follow the countryside code: Don't litter, avoid disturbing wildlife, dispose of smoking material responsibly

Move animals away from danger: Help at frog and toad road crossings, take injured wild animals to rescue centres, move insects rather than killing them when finding them at home

Reduce invasive species: Support invasive species removal, avoid planting non-native and invasive species in garden and ponds, follow instructions in wild areas to avoid the spread of invasive species

Recycle: Recycle at home and use council recycling facilities for larger items

Appendix 2: Pre-workshop survey

Thank you for your participation in this project prioritising individual actions for nature.

The following survey presents a variety of potential actions individuals could undertake to support UK biodiversity. In consideration of the aims of the workshop, and to keep the survey short, we've only included actions that a 'typical' person can participate in. While organisational behaviours and rural landholder behaviours are very important in protecting threatened species and biodiversity, this work focuses on actions which individuals take.

Some of these actions are likely to be further divisible but if this is the case, please do your best to assess them as a group or class of behaviours. There are 59 behaviours to rate and it would be great to get ratings for as many as possible, but if you are unsure of your answer or running short on time - just select 'next page' and your answers will be saved. Please do take part even if you do not feel confident in your answers - across The Wildlife Trusts there is a lot of knowledge and experience which we hope this survey can collect together to prioritize this longlist of 59 behaviours.

The results from this survey will be presented in two upcoming workshops - details on how to sign up for these workshops are provided at the end of the survey. After the survey and workshops, a literature search will be undertaken for the highly prioritised behaviours to understand the evidence base for their impact, and a nationally representative survey will be conducted to understand how many people in the UK already take these actions, and how many who don't currently take these actions would be willing to do so. Reporting from this study will be shared once each part is completed, with all findings presented together in the new year.

Instructions

The survey will take approximately 15 minutes to complete but you can take as much or as little time as you need.

You can choose to either consider the **'ecological impact' on UK biodiversity** if the behaviour was widely adopted, or the 'plasticity' of the behaviour – **how likely it is that individuals could be encouraged to engage in the behaviour**. Which would you like to consider?

Ecological impact on UK biodiversity if the behaviour was widely adopted
O Whether UK individuals could be encouraged to engage in the behaviour
O Both
We want to measure whether the responses to this survey have good representation across the Wildlife Trusts and different job roles. Which wildlife trust do you work with?
▼ Alderney Wildlife Trust Yorkshire Wildlife Trust

What is your job title?	
The results of this study will be shared and published, but any identifying information will be removed and your answers will be anonymized. Please select 'I consent' below to show younderstand how your answers will be used, then proceed to the next page to start the survey.	
O I consent	

[Only shown if participant chose to rate biodiversity impacts]

Biodiversity impacts

Using the dropdown boxes, please indicate on a scale of 0-4 the potential positive ecological impact for UK biodiversity if the behaviour was widely adopted (0 being no positive impact and 4 for behaviours with the highest ecological impact). For each behaviour, there is a short description with a non-exhaustive list of examples. Base your decision on your own knowledge and the information provided. You do not have to provide a rating for all behaviours - if you do not know, please select this option.

When assessing impacts for UK biodiversity, please think of both species and habitats, as well as the environmental conditions (e.g. soil or water quality) which allow biodiversity to thrive.

[Only shown if participant decided to rate ease of behaviour change]

Ease of behaviour change

Using the dropdown boxes, please indicate on a scale of 0-4 how easy you think it is to persuade people in the UK to do the behaviour (0 being no-one could be persuaded to do this behaviour and 4 for behaviours which it is easiest to persuade people in the UK to do). For each behaviour, there is a short description with a non-exhaustive list of examples. Base your decision on your own knowledge and the information provided. You do not have to provide a rating for all behaviours - if you do not know, please select this option. When assessing plasticity, please think of potential benefits (e.g. money-saving, wellbeing, etc.) and barriers (e.g. time, money, social norms, etc.) of the behaviour.

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Writing to decision makers to encourage them to take action for nature: Write to local members of parliament or local government about their environmental policies, issues and solutions, write to companies about nature-friendly practices, send 'letters to the Editor'

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Organise others to take action for nature: Litter pick, fundraiser for nature NGOs, sponsored walk, beach clean, corporate volunteer day

Supporting, sharing and joining in: Support those making biodiversity-friendly choices, share stories about nature, join in community actions for nature, tell positive nature stories and support those who are making biodiversity-friendly choices, share posts and articles about conservation on social media

Organise low impact days and events: Provide vegetarian or vegan food at gatherings of friends and family, organise a plastic-free Halloween party, go one day without single use plastic

Collect litter: Take a rubbish bag when walking and collect litter, do a beach clean-up

Compost your waste: Create a compost heap or pile in your garden

Herbicide and pesticide free gardening: Practice chemical-free gardening, use companion planting for pest control, Avoid using pesticides, herbicides and synthetic fertilizer

Avoid soil degradation: Rotate annual plants and crops each year, add compost to soil

Grow your own food and flowers: *Grow flowers instead of buying, Grow your own food, plant a fruit tree*

Reduce permeable and artificial surfaces in gardens: Use permeable paving, gravel or plants instead of hard driveway or patio, remove plastic grass, plant hedges instead of using fences

Provide water for animals: Create puddling pool for butterflies, Provide water for animals

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Create habitats with food for wildlife throughout the year: Plant plants with different flowering or fruiting seasons

Create healthy environments for animals: Clean bird boxes and feeders, change water for birds daily

Feed wildlife: Put up a bird feeder or butterfly feeding table, feed badgers or hedgehogs, create spaces with flowering plants for pollinators

Install features that allow small mammals to move between areas without problems:

Add a hedgehog hole to fences

Maintain your pond for wildlife: Add submerged aquatic plants to pond, ensure ponds have a shallow edge for wildlife access

Planting in smaller outside spaces: Create a container garden, plant wildlife-friendly herbs or flowers, plant nighttime flowering plants

Ponds for spaces of all sizes: Create a pond suitable for the space, from a bucket or container pond to wetland

Right plant, right place: Add plants which support local wildlife - bog gardens for wet spaces, coastal gardens near the sea, add bushes and shrubs for nesting birds, plant native trees, spring flowering bulbs, and butterfly host plants, use native wild wildflower seed mixes

Reduce warming in urban areas: Grow plants up building walls to cool them, plant shading trees and shrubs

Reduce outside lighting at home: Dim or reduce nighttime garden lighting, use blackout blinds or curtains

Don't take BBQS to wild areas and be careful with cigarettes: Take a picnic instead of BBQ on day out, be careful with cigarette disposal to prevent accidental fire

Responsible bonfire behaviour: Check bonfire for hedgehogs, build bonfire the day it will be lit, protect bonfire with chicken wire

Responsible use of wild areas - follow the countryside code: Dispose of smoking material responsibly on heathland, don't litter, avoid disturbing wildlife

Move animals away from danger: Help at frog and toad road crossings, move insects rather than killing them when finding them at home

Reduce invasive species: Support invasive species removal, avoid planting non-native and invasive species in garden and ponds, follow instructions in wild areas to avoid the spread of invasive species

Recycle: Recycle at home and use council recycling facilities for larger items

How confident are you in your knowledge and/or experience of ecological impacts of individual behaviours:
O Not knowledgeable at all
O Slightly knowledgeable
Moderately knowledgeable
O Very knowledgeable
Extremely knowledgeable
How confident are you in your knowledge and/or experience of behaviour change:
O Not knowledgeable at all
○ Slightly knowledgeable
Moderately knowledgeable
O Very knowledgeable
Extremely knowledgeable
Are there any behaviours which you think should be included in this list but are not?

Thank you again for your time. Please do attend the workshops to discuss these behaviours and participate in the final rankings.

The first workshop will focus on the ecological impact of the behaviours (10am on 26th September) and the second on how likely it is that individuals can be encouraged to engage in the behaviour (date TBC). If you'd like to attend either workshop and haven't yet registered, or would like to receive updates about this project, please do so here: https://forms.office.com/e/z2Y2UTRZ06.

If you have any queries please contact Sarah Papworth: sarah.papworth@surreywt.org.uk

Appendix 3: Discussion summary

During the workshop there were 12 breakout rooms – 6 discussed the behaviours in the top 20 in the initial survey, and 6 discussed the rest of the behaviours. The majority of behaviours were discussed in at least 1 of these breakout rooms (Table A3). None of the behaviours which were not discussed were ranked in the top 20.

Table A3.1: Number of breakout rooms which discussed each behaviour (out of 12)

Behaviours	Number of breakout rooms discussed in
Feed wildlife; Move animals away from danger; Recycle; Report illegal behaviours; Stop buying peat; Volunteer for nature	7
Collect litter; Hands-off gardening; Maintain your pond for wildlife; Reduce meat, dairy and eggs; Supporting, sharing and joining in; Take action for nature at work or school	6
Be fire aware; Choose products with less plastic, avoid plastic products; Engage with decision makers to encourage them to take action for nature; Join activist activities; Responsible bonfire behaviour; Responsible cat ownership; Sign a petition	5
Don't use chemicals in the household which are damaging to the environment; Eat local, seasonal and organic; Make food from scratch; Ponds for spaces of all sizes; Reduce family size; Reduce paper waste; Responsible dog ownership	4
Avoid synthetic clothes and don't use products which contain microplastics; Create habitats with food for wildlife throughout the year; Create healthy environments for animals; Grow your own food and flowers; Install features that allow small mammals to move between areas without problems; Learn how to undertake conservation actions; Organise others to take action for nature; Planting in smaller outside spaces; Reduce energy use; Reduce fossil fuel use; Work in conservation	3
Donate money to conservation; Don't buy, consume or collect products from plants and animals unless from sustainable sources; Engage with and advocate for nature-friendly formal governance structures; Learn how to undertake climate actions; Provide water for animals; Reduce invasive species; Reduce outside lighting at home; Reduce permeable and artificial surfaces in gardens; Reduce water use	2
Apply for positions of responsibility on an environmental platform; Be a nature-friendly tourist; Buy land for nature; Choose biodiversity certified products; Create animal homes; Herbicide and pesticide free gardening; Reduce carbon from travel; Reduce food waste; Responsible use of wild areas - follow the countryside code; Right plant, right place	1
Avoid short and single use products; Avoid soil degradation; Avoid using harmful insect repellents; Choose biodiversity-friendly investments; Reduce warming in urban areas; Vote for nature	0

Types of behaviours

The breakout groups discussed how the characteristics of the behaviours and people's attitudes towards them affected how easy it was to persuade people to change their behaviour. For example, some behaviours are very binary (starting or stopping, such as changing to a renewable energy tariff), whereas others can be more graded, such as

reducing meat, dairy and eggs. There are also differences in the regularity of behaviours – some just have to happen once, such as creating a pond, others are on-going, such as maintaining that pond. Some regular behaviours can become habits, and be harder to change. There are also differences in the complexity of behaviours, and more complex behaviours were perceived to be harder to persuade people to do.

Influences on behaviours

Participants identified various factors which influence how likely people are to do the behaviours, and how easy it is to persuade them to change. They acknowledged that people don't act purely for nature, but instead are influenced by various other factors, such as financial and time constraints or structural barriers (e.g. the accessibility of organic food or dairy alternatives). These factors can have both positive and negative influences, as people can also undertake nature friendly actions for other reasons (such as saving money). Participants identified a few behaviours in the list where cultural shifts were having an impact, such as reducing family size and reductions for some single-use plastics.

Participants also acknowledged the role of individual differences. For example, many people are willing to sign a petition and assign responsibility for change to others, such as local and national government, whereas fewer are willing to organise others to take more direct action such as a beach clean. This may be due to the differences in time commitment between these two actions, but workshop participants also suggested that people who organise such actions often have a character which takes responsibility on themselves and tries to influence others.

Different audiences and attitudes to behaviours

Differences between individuals leads to different audience groups which are easier / more difficult to engage with specific behaviours. In some cases, behaviours are not relevant to certain groups, for example only dog and cat owners can be engaged to encourage responsible pet-owning behaviours, and some gardening behaviours are only possible for individuals with larger gardens. Other differences between audiences are more subtle, for example, whether an audience can be persuaded undertake a behaviour because it value nature itself, or whether that behaviour needs to be linked to other benefits for the audience, e.g. keeping fit and meeting people by becoming a practical volunteer. Different audiences also have different perceptions of the desirability of some behaviours. One particularly discussed behaviour was 'hands off gardening', which includes actions such as 'no mow May'. People who value a tidy garden can view a lack of mowing as negligent or unneighbourly. Participants also discussed how those engaged with the Wildlife Trust and conservation more generally tend to come from particular demographics, rather than engaging more widely across the UK population.

Interplay with the Wildlife Trusts

Some participants commented on the relationship between the Wildlife Trusts and the specific behaviours. This included how their perception of what was easy to do was influenced by the Wildlife Trust 'bubble' – people who worked for, and were in contact with the Wildlife Trusts may not be typical of the general UK public, and members of the public may interact with Wildlife Trust staff in a certain way. Behaviours were also perceived to be easier to influence when the Wildlife Trusts had already developed or delivered a program which targeted that behaviour. Participants also commented on how some behaviours were unlikely to ever be a focus of a Wildlife Trust campaign, such as moving animals away from danger and to a rescue centre, or any sort of program associated with family planning.

Message complexity

Behaviours which are either more complex to do, or have more nuanced impacts, are perceived to need more complex messaging. For example, multiple participants discussed feeding animals, which in some cases (e.g. feeding bread to ducks) can have negative ecological impacts. Likewise, many animals should not be moved if found, and it may even be illegal to do so. Participants considered it important to clearly communicate when a behaviour (and exactly what type of behaviour) is beneficial. Participants also commented that messaging should highlight how an action will benefit an individual, and link the action to things people care about. Participants also suggested that messages should be communicated to individuals at key decision points, e.g. in shops before the point of purchase. Participants commented that messaging is dependent messengers on knowing which actions are, and are not, beneficial to nature.

The data collection process

Some participants commented on how specific factors might bias the answers given. For example, the survey was conducted in the autumn, which may have caused respondents to overestimate the impacts of checking bonfires for hedgehogs, and under or overestimate the ease of behavioural change for this action. Likewise, the specific wording used to describe the behaviours could have impact how people evaluate them. For example, 'hands-off gardening' was perceived to be considered more difficult to persuade people to do than 'low impact gardening'.

Barriers and facilitators

Table A3.2: Facilitators and barriers to behaviour change discussed in workshop breakout rooms.

Categories	Facilitators	Barriers
Action frequency and difficulty	Actions with instant gratification; actions which have fewer steps or take less time; actions which only need to be done once; actions which are graded rather than on / off actions.	Longer-term actions; habits / ongoing behaviours; infrequent behaviours; complex / multi-step behaviours; unpredictable behaviours; complete switches are hard.
Action benefits	Actions which fulfil needs; actions which make people happy or are enjoyable; actions which have additional benefits e.g. save money; actions which link to existing values or priorities; perceived links between behaviour and impact; visible impact.	Lack of access to positive benefits; negative impacts of behaviours for actors e.g. cost more; actions which are unpleasant; actions do not align with values or priorities; Less visible behaviours; actions with 'bad press'; action where the outcome is negatively perceived e.g. 'messy gardens'; competing concerns e.g. safety.
Capacity / resources	Behaviours which are accessible; behaviours which are free / save people money; possession of a garden; people having time / money to support actions; behaviours where people feel they know how to act; behaviours which make people feel empowered.	Behaviours which are not accessible; behaviours which require lots of time / resources; behaviours which require more self-determination (e.g. ownership of house); behaviours which require outside space; behaviours where there is a lack of alternatives.

Environment	Actions for which appropriate resources are available; structural facilitators e.g. recycling bins; technological facilitators e.g. commercially available swallow bricks.	Transport barriers e.g. to volunteering opportunities; structural barriers e.g. private transport required to transfer large items for recycling; environmentally friendly purchases less widely available; default options chosen for financial and not nature-based reasons.
Individual differences	Awareness of actions; awareness of action benefits; confidence in ability to undertake actions; training on how to undertake actions.	Lack of knowledge about how to do behaviour; lack of knowledge about costs / benefits of behaviour for nature; lack of confidence; compliance / lack of compliance with behavioural norms; people think they are already doing enough
Messaging and audience	Targeted messaging; clear and consistent messaging; linking to existing messaging; establishing multiple lines of communication; sharing messages; signage; understanding motivations for behaviours; equating climate and biodiversity impacts; one behaviour facilitating others	Limited audiences; unclear messaging; less promoted actions; uncertainty about who is responsible for actions
Organisational	Organisational support; workplace environmental commitments; trust in organisational messengers; The Wildlife Trusts as 'natural messengers' for some behaviours.	Lack of organisational accountability; being locked into contracts / services; fear or distrust of responsible organisations
Social	Joining with like-minded people; organised activities increase confidence; peer influences; social norms; social processes; leaders; social / community movements	Acting alone; action dependent on others also acting; cultural and language barriers; peer influences; social norms

Appendix 4: Post-workshop survey

Thank you for your participation in this project prioritising individual actions for nature. In consideration of the aims of the workshop, we've only included actions that a 'typical' person can participate in. While organisational behaviours and rural landholder behaviours are very important in protecting threatened species and biodiversity, this work focuses on actions which individuals take.

Instructions The survey will take approximately 15 minutes to complete but you can take as much or as little time as you need.

We want to measure whether the responses to this survey have good representation across the Wildlife Trusts and different job roles. Which wildlife trust do you work with?

▼ Alderne	y Wildlife Trust Yorkshire	e Wildlife Trust	
What is yo	ur job title?		

The results of this study will be shared and published, but any identifying information will be removed and your answers will be anonymized. Please select 'I consent' below to show you understand how your answers will be used, then proceed to the next page to start the survey.

O I consent

Using the dropdown boxes, please indicate on a scale of 0-4 how easy you think it is to persuade people in the UK to do the behaviour (0 being no-one could be persuaded to do this behaviour and 4 for behaviours which it is easiest to persuade people in the UK to do). For each behaviour, there is a short description with a non-exhaustive list of examples. Base your decision on your own knowledge and the information provided. You do not have to provide a rating for all behaviours - if you do not know, please select this option. When assessing plasticity, please think of potential benefits (e.g. money-saving, wellbeing, etc.) and barriers (e.g. time, money, social norms, etc.) of the behaviour. As much as is possible, answer only based on the plasticity of the behaviour in an individual who is able to do the behaviour, and not it's impact for nature or the number of people.

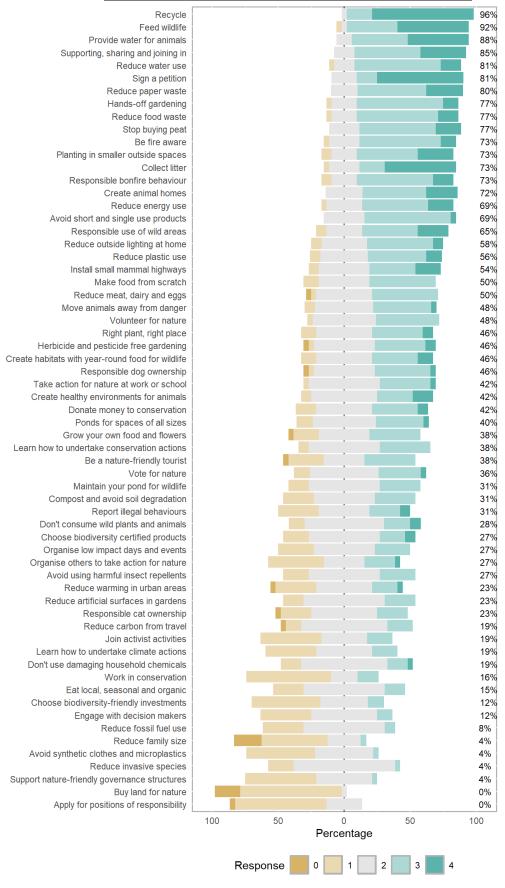
[List of the 63 behaviours in Appendix 1 and dropdown boxes with the options 0:no-one could be persuaded, 1, 2, 3, 4: highest likelihood in the UK]

For which three of these behaviours would you be most interested to see a review of their impact on UK biodiversity?

Vote for nature; Engage with and advocate for nature-friendly formal governance structures; Stop buying peat; Avoid short and single use products; Reduce fossil fuel use; Avoid using harmful insect repellents; Donate money to conservation; Volunteer for nature; Choose biodiversity-friendly investments; Take action for nature at work or school; Herbicide and pesticide free gardening; Reduce artificial surfaces in gardens; Hands-off gardening; Create habitats with food for wildlife throughout the year; Ponds for spaces of all sizes; Right plant, right place; Responsible use of wild areas - follow

the countryside code; Reduce invasive species; Sign a petition; Organise others to take action for nature; Be fire aware; Responsible dog ownership; Reduce food waste; Choose products with less plastic, avoid plastic products; Reduce water use; Collect litter; Reduce warming in urban areas; Choose biodiversity certified products; Reduce paper waste; Reduce meat, dairy and eggs; Report illegal behaviours; Buy land for nature; Reduce family size; Learn how to undertake climate actions; Engage with decision makers to encourage them to take action for nature; Don't buy, consume or collect products from plants and animals unless from sustainable sources; Reduce carbon from travel; Compost and avoid soil degradation; Move animals away from danger.





Appendix 6: Final rank for 63 rated behaviours

Behaviour	Final score	Pre- workshop survey average	Post- workshop survey average	Score change
Recycle	3.73	3.41	3.73	0.32
Sign a petition	3.46	3.04	3.46	0.42
Feed wildlife	3.42	3.28	3.42	0.14
Provide water for animals	3.35	2.99	3.35	0.36
Collect litter	3.23	2.21	3.23	1.02
Supporting, sharing and joining in	3.19	2.41	3.19	0.79
Reduce paper waste	3.08	2.94	3.08	0.14
Stop buying peat	2.96	2.68	2.96	0.29
Create animal homes	2.96	2.65	2.96	0.31
Planting in smaller outside spaces	2.92	2.89	2.92	0.04
Reduce water use	2.92	2.42	2.92	0.50
Reduce food waste	2.88	2.42	2.88	0.46
Hands-off gardening	2.85	2.56	2.85	0.29
Reduce energy use	2.85	2.85	2.85	0.00
Be fire aware	2.81	2.34	2.81	0.46
Responsible bonfire behaviour	2.81	2.73	2.81	0.08
Responsible use of wild areas	2.81	2.56	2.81	0.24
Avoid short and single use products	2.73	2.00	2.73	0.73
Install small mammal highways	2.65	2.29	2.65	0.36
Reduce plastic use	2.60	2.21	2.60	0.39
Reduce outside lighting at home	2.58	2.06	2.58	0.52
Create healthy environments for animals	2.50	2.14	2.50	0.36
Create habitats with year-round food for wildlife	2.46	2.48	2.46	-0.02
Move animals away from danger	2.44	2.37	2.44	0.07
Volunteer for nature	2.44	1.94	2.44	0.50
Herbicide and pesticide free gardening	2.42	2.35	2.42	0.07
Right plant, right place	2.42	2.23	2.42	0.20
Take action for nature at work or school	2.42	2.45	2.42	-0.03
Make food from scratch	2.38	1.91	2.38	0.47
Reduce meat, dairy and egg	2.38	2.04	2.38	0.34
Responsible dog ownership	2.38	2.07	2.38	0.31
Donate money to conservation	2.35	2.19	2.35	0.16
Ponds for spaces of all sizes	2.32	2.21	2.32	0.11
Learn how to undertake conservation actions	2.31	2.21	2.31	0.09
Vote for nature	2.28	1.93	2.28	0.35
Don't consume wild plants and animals	2.24	2.13	2.24	0.11
Choose biodiversity certified products	2.15	2.25	2.15	-0.09
Maintain your pond for wildlife	2.15	2.32	2.15	-0.17
Grow your own food and flowers	2.12	1.94	2.12	0.17
Avoid using harmful insect repellents	2.08	2.07	2.08	0.01
Compost and avoid soil degradation	2.08	1.99	2.08	0.09

Don't use damaging household chemicals	2.08	1.79	2.08	0.29
Reduce artificial surfaces in gardens	2.08	1.72	2.08	0.35
Report illegal behaviours	2.08	2.35	2.08	-0.28
Be a nature-friendly tourist	2.04	1.91	2.04	0.13
Organise low impact days and events	2.00	1.91	2.00	0.09
Reduce carbon from travel	2.00	1.90	2.00	0.10
Eat local, seasonal and organic	1.92	1.88	1.92	0.04
Responsible cat ownership	1.92	1.65	1.92	0.28
Organise others to take action for nature	1.88	1.88	1.88	0.00
Reduce warming in urban areas	1.88	1.93	1.88	-0.04
Reduce invasive species	1.85	2.03	1.85	-0.18
Learn how to undertake climate actions	1.81	1.75	1.81	0.06
Reduce fossil fuel use	1.77	1.87	1.77	-0.10
Engage with decision makers	1.73	1.77	1.73	-0.04
Join activist activities	1.73	1.45	1.73	0.28
Choose biodiversity-friendly investments	1.60	1.61	1.60	-0.01
Avoid synthetic clothes and microplastics	1.52	1.46	1.52	0.06
Work in conservation	1.52	1.57	1.52	-0.05
Support nature-friendly governance structures	1.50	1.49	1.50	0.01