

## Appendix 1. Online questionnaire on views towards bird species management (data used in Chapter 3).

*This is one of 12 variations of this questionnaire originally produced in three languages, split between the provision of information about bird nativeness and two choice experiment 'blocks'. This is the English version, with the inclusion of nativeness information and choice experiment block 1.*

*Note, as originally hosted online some question elements are not perfectly aligned. Annotations to the survey are denoted by **\*bold underlined text***

### Appendix 1.1. Views on bird management questionnaire

#### Page 1: Consent

This questionnaire forms part of a project that is being carried out by a group of researchers from University of Kent, University of Leeds and University of Copenhagen. We are interested in understanding what preferences people have for the management of bird species in Europe. You are not required to have any specific knowledge or interest in the topic to complete the questionnaire. Your opinion still matters.

#### Will my answers be kept confidential?

Yes. You will be asked for some details regarding your personal circumstances (e.g. gender, age). However, these details will be entirely confidential. Your responses will be anonymised so they cannot be traced back to you personally. The findings of this research will be published in peer-reviewed scientific literature.

I understand that my participation is voluntary and that I am free to stop completing the questionnaire at any time

Yes, please continue **\*If respondents did not choose this option they would be 'screened out' of the questionnaire**

#### Page 2: Eligibility

We first need to check that you are eligible to take part in this survey.

What is your country of residence?

Britain/Other

## Page 3: Eligibility

How long have you lived in Britain?

Since birth/Less than/1 year/1 - 2 years/3 - 5 years/6 - 10 years/11 - 20 years/21 - 30 years/30+ years

What is your nationality? (\*[List of nationalities provided here](#))

Which of these cities do you live in or nearby (if any)?

London/Bristol/Leeds/Other

○ ○ ○ ○

## Page 4: Your attitudes towards birds

We are interested in your views and attitudes towards pest bird species and how they should be managed. First of all, we would like you to answer a few simple questions.

Please rate how strongly you agree or disagree with the following three statements

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I enjoy listening to bird song	☒	☒	☒	☒	☒
I enjoy watching birds	☒	☒	☒	☒	☒
I find the noise made by some birds a nuisance	☒	☒	☒	☒	☒

In the last year have you used any methods to discourage birds from your home or garden (e.g. putting up nets, chasing, hand-clapping, shouting, using predator decoys)?

Yes/No

In the last year, have you fed birds in your garden/outdoor area?

Yes/No/I don't have access to a garden or outdoor area

If yes, how often do you provide food for birds?

Daily/Weekly/Monthly/Less than monthly/Never

## Page 5: Do you recognise these bird species?

In this next section we will ask you about your views on the management of pest bird species. To begin with, please can you tell us how familiar you are with the following 6 bird species?

*Branta canadensis*

	Yes	No	Not sure
Do you recognise this species?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you ever seen this species in the town/city where you live?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*Anser anser*

	Yes	No	Not sure
Do you recognise this species?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you ever seen this species in the town/city where you live?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Page 6: Do you recognise these bird species?

*Corvus corone*

	Yes	No	Not sure
Do you recognise this species?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Have you ever seen this species in the town/city where you live?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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*Corvus splendens*

	Yes	No	Not sure
Do you recognise this species?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you ever seen this species in the town/city where you live?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Page 7: Do you recognise these bird species?

*Columba palumbus*

	Yes	No	Not sure
Do you recognise this species?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you ever seen this species in the town/city where you live?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*Psittacula krameri*

	Yes	No	Not sure
Do you recognise this species?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Have you ever seen this species in the town/city where you live?			
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#### Page 8: Pest bird species in Britain

Over the following pages, we will ask you about your views on the management of bird species which are considered pests in one way or another. Pest birds can cause negative impacts by, for example, competing with other species for food or places to nest, damaging buildings, eating crops, and/or introducing diseases. The larger the size of a bird population, the more likely it is that negative impacts will occur.

Currently society spends money on managing pest birds to reduce the negative impacts. Management actions can include 'bird deterrents' (e.g. use of nets to protect crops/buildings, using lasers and noise machines to scare birds away) or 'lethal control' (e.g. shooting/gassing/poisoning adult birds, removing/damaging bird eggs). The 'current management' includes a combination of both 'bird deterrents' and 'lethal control'. These measures will all reduce the impact of birds and the damage they cause.

Can you think of any bird species that are pests?

Yes/No

If yes, please name the first species that you thought of:

☐ ☐

#### Page 9: Native and invasive species in Britain

Some of the pests are 'invasive' and some are 'native'. The term 'invasive' refers to a pest species which has been introduced outside of where it occurs naturally and has the ability to spread geographically. 'Native' species live where they occur naturally.

Were you aware of the term 'invasive' species?

Yes/No

Were you aware that the definition only refers to species that do not occur naturally in Britain?

Yes/No

Can you think of any invasive species?

Yes/No

If yes, please name the first species you thought of:

☐ ☐ ☐ ☐ ☐

## Page 10: Managing pest bird species in the future

We are now going to ask if you would like to see a change in how society manages pest birds during the next ten years. Remember that all the birds we show you are pests in one way or another. Society therefore spends money each year on managing the negative impact of these birds. These costs are paid through your income tax.

The management of a pest bird species can be through 'bird deterrents', 'lethal control', 'current management' (a combination of 'bird deterrents' and 'lethal control'), or you may choose 'no management'. 'No management' means that all current management practices are stopped and money is spent on paying compensation for damage caused by the pest bird instead. However, do remember that larger populations will cause more damage. Despite their negative impacts, you may prefer that some birds are not managed at all, or for their populations to increase so that you can see more of them in your local area.

For each set of choices, we describe a no change option that represents the projected bird population 10 years from now if 'current management' continues. You will not have to pay any additional money via your household income tax each year for this option.

We also describe two other policies to manage pest bird species. These will cost money, so the amount of income tax you will pay as a household each year will rise.

## Page 11: Example of the following choices

**Illustration of the bird species**

**Latin name for the bird species**  
Species name: *Larus argentatus*

**If the species is native or invasive**  
Native species

**Projected population in 10 years: ranging from Abundant, Common, Frequent, Occasional to Rare**

Projected population in Europe in 10 years time: Abundant

High A C F O R Low

**Change from the predicted population in 10 years with no change in management**

**The type of management used to reduce negative impacts**

**Change in income tax payment per household per year**

**Please choose one option from the three presented**

No change	Policy 1	Policy 2
No change from projected population in 10 years	Large decrease in population size	Small decrease in population size
No change from <b>current management</b> practices (bird deterrents and lethal control)	Management via <b>lethal control</b> (e.g. shooting adult birds/removal of eggs)	Management via <b>bird deterrents</b> (e.g. nets/noise machines)
£0 increase in tax cost per household per year	£9 increase in tax cost per household per year	£12 increase in tax cost per household per year

[+ More info](#)

☐ No change
 ☐ Policy 1
 ☐ Policy 2

Displayed above is an example of the type of choice you will be presented with on the following pages.

Please consider each new page as a separate set of choices and pick the option you prefer from the three available. You will see a total of 12 different sets of choices. Results from similar surveys show that people tend to overstate how much they are actually willing to pay for wildlife management through an increase in income tax. Please bear in mind that an additional income tax payment each year will result in you having less money to spend on other things in your daily life.

#### Page 12: Choice 1

Please consider this page as a separate set of choices. Which of the following options would you choose? There are no right or wrong answers



Species name: *Corvus splendens*

*Invasive species*

Projected population in Europe in 10 years time: Rare

High  
A C F O **R** Low

##### No change

<b>No change</b> from projected population in 10 years
No change from <b>current management</b> practices (bird deterrents and lethal control)
<b>£0 increase</b> in tax cost per household per year

##### Policy 1

<b>Small increase</b> in population size
Management via <b>lethal control</b> (e.g. shooting adult birds/removal of eggs)
<b>£4 increase</b> in tax cost per household per year

##### Policy 2

<b>Small decrease</b> in population size
Management via <b>bird deterrents</b> (e.g. nets/noise machines)
<b>£12 increase</b> in tax cost per household per year

No change/Policy 1/Policy 2

#### Page 13: Choice 2

Please consider this page as a separate set of choices. Which of the following options would you choose? There are no right or wrong answers



Species name: *Columba palumbus*

*Native species*

Projected population in Europe in 10 years time: Abundant

High  
**A** C F O R Low

##### No change

<b>No change</b> from projected population in 10 years
No change from <b>current management</b> practices (bird deterrents and lethal control)
<b>£0 increase</b> in tax cost per household per year

##### Policy 1

<b>Small increase</b> in population size
<b>No management</b> at all (removal of current management practices)
<b>£2 increase</b> in tax cost per household per year

##### Policy 2

<b>Large decrease</b> in population size
<b>No management</b> at all (removal of current management practices)
<b>£12 increase</b> in tax cost per household per year

No change/Policy 1/Policy 2

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## Page 14: Choice 3

Please consider this page as a separate set of choices. Which of the following options would you choose? There are no right or wrong answers

Species name: *Anser anser**Native species*
 Projected population in Europe in 10 years time: Occasional
 High  
A C F **O** Low  
R
**No change**

<b>No change</b> from projected population in 10 years
No change from <b>current management</b> practices (bird deterrents and lethal control)
<b>£0 increase</b> in tax cost per household per year

**Policy 1**

<b>No change</b> from projected population in 10 years
Management via <b>lethal control</b> (e.g. shooting adult birds/removal of eggs)
<b>£9 increase</b> in tax cost per household per year

**Policy 2**

<b>Small increase</b> in population size
Management via <b>bird deterrents</b> (e.g. nets/noise machines)
<b>£2 increase</b> in tax cost per household per year

 No change/Policy 1/Policy 2
 ○ ○ ○

## Page 15: Choice 4

Please consider this page as a separate set of choices. Which of the following options would you choose? There are no right or wrong answers

Species name: *Branta canadensis**Invasive species*
 Projected population in Europe in 10 years time: Frequent
 High  
A C **F** O Low  
R
**No change**

<b>No change</b> from projected population in 10 years
No change from <b>current management</b> practices (bird deterrents and lethal control)
<b>£0 increase</b> in tax cost per household per year

**Policy 1**

<b>Large decrease</b> in population size
No change from <b>current management</b> practices (bird deterrents and lethal control)
<b>£9 increase</b> in tax cost per household per year

**Policy 2**

<b>Small increase</b> in population size
Management via <b>lethal control</b> (e.g. shooting adult birds/removal of eggs)
<b>£2 increase</b> in tax cost per household per year

 No change/Policy 1/Policy 2
 ○ ○



## Page 16: Choice 5

Please consider this page as a separate set of choices. Which of the following options would you choose? There are no right or wrong answers

Species name: *Corvus corone**Native species*

Projected population in Europe in 10 years time: Common

 High  
 A ☒ C F O R  
 Low
**No change**

<b>No change</b> from projected population in 10 years
No change from <b>current management</b> practices (bird deterrents and lethal control)
<b>£0 increase</b> in tax cost per household per year

**Policy 1**

<b>No change</b> from projected population in 10 years
Management via <b>bird deterrents</b> (e.g. nets/noise machines)
<b>£0 increase</b> in tax cost per household per year

**Policy 2**

<b>Small decrease</b> in population size
No change from <b>current management</b> practices (bird deterrents and lethal control)
<b>£12 increase</b> in tax cost per household per year

No change/Policy 1/Policy 2

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## Page 17: Choice 6

Please consider this page as a separate set of choices. Which of the following options would you choose? There are no right or wrong answers

Species name: *Psittacula krameri**Invasive species*

Projected population in Europe in 10 years time: Frequent

 High  
 A C ☒ F O R  
 Low
**No change**

<b>No change</b> from projected population in 10 years
No change from <b>current management</b> practices (bird deterrents and lethal control)
<b>£0 increase</b> in tax cost per household per year

**Policy 1**

<b>Large decrease</b> in population size
Management via <b>lethal control</b> (e.g. shooting adult birds/removal of eggs)
<b>£4 increase</b> in tax cost per household per year

**Policy 2**

<b>No change</b> from projected population in 10 years
<b>No management</b> at all (removal of current management practices)
<b>£2 increase</b> in tax cost per household per year

No change/Policy 1/Policy 2

## Page 18: Choice 7

Please consider this page as a separate set of choices. Which of the following options would you choose? There are no right or wrong answers

Species name: *Corvus splendens**Invasive species*

Projected population in Europe in 10 years time: Rare

 High  
 A C F O **R** Low
**No change**

<b>No change</b> from projected population in 10 years
No change from <b>current management</b> practices (bird deterrents and lethal control)
<b>£0 increase</b> in tax cost per household per year

**Policy 1**

<b>Small increase</b> in population size
<b>No management</b> at all (removal of current management practices)
<b>£2 increase</b> in tax cost per household per year

**Policy 2**

<b>Small decrease</b> in population size
Management via <b>bird deterrents</b> (e.g. nets/noise machines)
<b>£12 increase</b> in tax cost per household per year

No change/Policy 1/Policy 2



## Page 19: Choice 8

Please consider this page as a separate set of choices. Which of the following options would you choose? There are no right or wrong answers

Species name: *Branta canadensis**Invasive species*

Projected population in Europe in 10 years time: Frequent

 High  
 A C **F** O R Low
**No change**

<b>No change</b> from projected population in 10 years
No change from <b>current management</b> practices (bird deterrents and lethal control)
<b>£0 increase</b> in tax cost per household per year

**Policy 1**

<b>Small increase</b> in population size
Management via <b>bird deterrents</b> (e.g. nets/noise machines)
<b>£9 increase</b> in tax cost per household per year

**Policy 2**

<b>Large decrease</b> in population size
<b>No management</b> at all (removal of current management practices)
<b>£4 increase</b> in tax cost per household per year

No change/Policy 1/Policy 2

## Page 20: Choice 9

Please consider this page as a separate set of choices. Which of the following options would you choose? There are no right or wrong answers

Species name: *Columba palumbus**Native species*

Projected population in Europe in 10 years time: Abundant

 High  
 A C F O R  
 Low
**No change**

<b>No change</b> from projected population in 10 years
No change from <b>current management</b> practices (bird deterrents and lethal control)
<b>£0 increase</b> in tax cost per household per year

**Policy 1**

<b>Small decrease</b> in population size
Management via <b>bird deterrents</b> (e.g. nets/noise machines)
<b>£0 increase</b> in tax cost per household per year

**Policy 2**

<b>No change</b> from projected population in 10 years
<b>No management</b> at all (removal of current management practices)
<b>£9 increase</b> in tax cost per household per year

No change/Policy 1/Policy 2

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## Page 21: Choice 10

Please consider this page as a separate set of choices. Which of the following options would you choose? There are no right or wrong answers

Species name: *Psittacula krameri**Invasive species*

Projected population in Europe in 10 years time: Frequent

 High  
 A C **F** O R  
 Low
**No change**

<b>No change</b> from projected population in 10 years
No change from <b>current management</b> practices (bird deterrents and lethal control)
<b>£0 increase</b> in tax cost per household per year

**Policy 1**

<b>Small increase</b> in population size
Management via <b>bird deterrents</b> (e.g. nets/noise machines)
<b>£2 increase</b> in tax cost per household per year

**Policy 2**

<b>Large decrease</b> in population size
<b>No management</b> at all (removal of current management practices)
<b>£4 increase</b> in tax cost per household per year

No change/Policy 1/Policy 2

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## Page 22: Choice 11

Please consider this page as a separate set of choices. Which of the following options would you choose? There are no right or wrong answers

Species name: *Anser anser**Native species*Projected population in Europe in 10 years time: Occasional High A C F ☒ **O** Low R**No change**

<b>No change</b> from projected population in 10 years
No change from <b>current management</b> practices (bird deterrents and lethal control)
<b>£0 increase</b> in tax cost per household per year

**Policy 1**

<b>Small increase</b> in population size
Management via <b>bird deterrents</b> (e.g. nets/noise machines)
<b>£2 increase</b> in tax cost per household per year

**Policy 2**

<b>No change</b> from projected population in 10 years
Management via <b>lethal control</b> (e.g. shooting adult birds/removal of eggs)
<b>£9 increase</b> in tax cost per household per year

No change/Policy 1/Policy 2

## Page 23: Choice 12

Please consider this page as a separate set of choices. Which of the following options would you choose? There are no right or wrong answers

Species name: *Corvus corone**Native species*Projected population in Europe in 10 years time: Common High A ☒ **C** F O Low R**No change**

<b>No change</b> from projected population in 10 years
No change from <b>current management</b> practices (bird deterrents and lethal control)
<b>£0 increase</b> in tax cost per household per year

**Policy 1**

<b>No change</b> from projected population in 10 years
<b>No management</b> at all (removal of current management practices)
<b>£12 increase</b> in tax cost per household per year

**Policy 2**

<b>Small decrease</b> in population size
Management via <b>bird deterrents</b> (e.g. nets/noise machines)
<b>£0 increase</b> in tax cost per household per year

No change/Policy 1/Policy 2

Page 24: Reason for choices In the preceding pages did you **always** choose the **No change** option?

Yes/No

As you **always** chose the **No change** option, please can you indicate your primary reason for doing so, from the statements listed below:

It was the fastest way to get through the questionnaire/I am against the management of any bird species/I am against the management of native bird species/I am against the lethal control of birds/I do not care about the management of bird species populations/I would prefer bird species management to stay as it is now/I already pay enough tax and existing public funds should pay for bird species management/The trade-off between the different options made No change the best choice for me in all sets/I do not think it is important to finance these changes in bird species management/I prefer to spend my money on other things/I could not relate to the background information provided/Bird species management should not be funded through taxation/The sets of options were difficult to relate to/The options were too expensive for what I would get out of bird species being managed/I could not afford any of the proposed option changes/Other

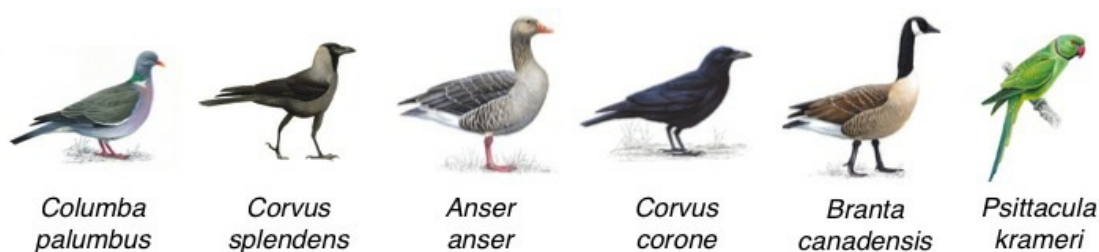
If you selected Other, please specify:

#### Page 25: Reasons for choices

When making your decision between each set of options, please indicate how often you paid attention to the various pieces of information you were provided with:

	Always	Sometimes	Never
The bird species in question	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Whether the bird species was native or invasive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The predicted change in population size	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The type of management used to control bird impacts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Additional income tax cost to your household per year	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Page 26: Appearance ranking



Please rank each bird species in terms of how attractive, you find their appearance, scoring from 1 (most attractive) to 6 (least attractive)

	1 (most attractive)	2	3	4	5	6 (least attractive)
<i>Columba palumbus</i> (native)	✖	✖	✖	✖	✖	✖
<i>Corvus splendens</i> (invasive)	✖	✖	✖	✖	✖	✖
<i>Anser anser</i> (native)	✖	✖	✖	✖	✖	✖
<i>Corvus corone</i> (native)	✖	✖	✖	✖	✖	✖
<i>Branta canadensis</i> (invasive)	✖	✖	✖	✖	✖	✖
<i>Psittacula krameri</i> (invasive)		✖	✖	✖	✖	✖

Page 27: Your views on the natural world Please rate how strongly you agree or disagree with the following statements.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
We are approaching the limit of the number of people the Earth can support.	✖	✖	✖	✖	✖
Humans have the right to modify the natural environment to suit their needs.	✖	✖	✖	✖	✖
When humans interfere with nature it often produces disastrous consequences.	✖	✖	✖	✖	✖
Human ingenuity will insure that we do NOT make the Earth unlivable.	✖	✖	✖	✖	✖
Humans are seriously abusing the environment.	✖	✖	✖	✖	✖
The Earth has plenty of natural resources if we just learn how to develop them.	✖	✖	✖	✖	✖

Plants and animals have as much right as humans to exist.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The balance of nature is strong enough to cope with the impacts of modern industrial nations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page 28: Your views on the natural world continued Please rate how strongly you agree or disagree with the following statements.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Despite our special abilities, humans are still subject to the laws of nature.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The so-called “ecological crisis” facing humankind has been greatly exaggerated.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Earth is like a spaceship with very limited room and resources.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Humans were meant to rule over the rest of nature.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The balance of nature is very delicate and easily upset.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Humans will eventually learn enough about how nature works to be able to control it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If things continue on their present course, we will soon experience a major ecological catastrophe.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page 29: Questions about you

Finally, we are interested in knowing whether people's answers are related to their background and interests. All information you provide will be anonymous and cannot be traced back to you as an individual.

During the last five years have you been a member of, or made a donation to, any wildlife conservation or natural heritage organisations (e.g., RSPB, Wildlife Trust, National Trust)?

Yes/No

What is your gender?

Male/Female/Other/Rather not say

☐ ☐ ☐ ☐

What is your age?

18-24 years old/25-34 years old/35-44 years old/45-54 years old/55-64 years old/65 years and over/Rather not say

☐ ☐ ☐ ☐ ☐ ☐ ☐

What is your yearly household income (before tax)?

Under £15,000/£15,000 - £19,999/£20,000 - £29,999/£30,000 – £39,999/£40,000 – £49,999/£50,000 – £75,000/Over £75,000/Rather not say

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Page 30: Thank you, please click the link below to exit the survey

Do not close your browser window. Please click on [this link](#) to exit the survey. Thank you for taking the time to complete this survey.

For questions relating to this survey, please contact Tristan Pett (-email address-).