

# Can information-seeking behaviour be encouraged in conservation professionals?

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## Summary

The process of how individuals choose between different actions, and how these decisions may interact and impact conservation outcomes is a crucial, under-investigated part of conservation practice. This study focuses on how an online information about conservation interventions could be presented to increase engagement by encouraging decision-makers to seek more information. Specifically, this research investigates how information-seeking behaviour is influenced by the amount and specificity of information initially provided, the presence of images, and whether information is presented by specific individuals. 115 participants were recruited online to test information seeking behaviour in four choice sets which described conservation decisions. In each choice set participants were randomly assigned to see one of two conditions: set 1) Longer and shorter descriptions of the two conservation interventions; set 2) Equal length descriptions which either did, or did not, include specific numeric information; set 3) Identical text either with or without images of the interventions; set 4) Identical information either presented as the opinion of a conservation professional or as a descriptive statement. Participants chose to view more information before making a decision in approximately half of all cases, but analyses suggested there was no effect of experimental condition or gender, years in conservation or previous experience on information seeking behaviour. It is possible that this sample was not large enough to detect these effects if they are present, and the odds ratios from the models suggest that increasing the specificity of the information provided could double information seeking behaviour, thus would be the best choice for further investigation.

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## Summary of methodology

In five online recruiting waves on social media and email lists between January and February 2019, conservation professionals were invited to complete an online survey. Participation was entirely voluntary and the survey took around 10 minutes. Ethical approval was granted by Royal Holloway, University of London. The survey was constructed in Qualtrics and composed of three parts: demographic questions about the participant, questions about four specific conservation scenarios (randomly assigned from two variants of 24 possible scenarios), and brief questions about past decision-making in similar contexts. For each of the four scenarios, participants are asked to select between two potential conservation methods to address a specified problem for the conservation of birds, bats or amphibians. They are also given an option to view additional information, which if selected would direct them to another page with more information about the same two options. Whether or not participants chose to view more information was used as the response variable in all analyses and an indicator of information-seeking behaviour.

Each of the four scenarios addressed one of the questions outlined above, by randomly assigning participants to see one of two conditions: 1) longer and shorter descriptions of the two conservation interventions; 2) Equal length descriptions which either did, or did not, include specific numeric information; 3) Identical text either with or without images of the interventions; 4) Identical information either presented as the opinion of a conservation professional or as a descriptive statement.

Choosing to view more information was the binomial response variables and the specific scenarios presented were included as random effects in mixed-effects models conducted using 'lme4' in RStudio v1.1.463. Estimates for  $R^2$  were calculated using 'r2glmm'. Explanatory variables were the condition presented to the participant, participant gender, number of years working in conservation and whether they had an previous experience making the sorts of decisions described (self-reported).

148 people clicked on the link to participate in the survey. Two people did not consent to participate in the survey, and 18 did consent to participate but did not answer any questions, leaving 128 people who answered at least one question. Twelve individuals entered demographic information but did not answer any other questions and so were excluded from analyses, as was a single individual who did not provide information on their gender, leaving a sample size for analysis of 115 individuals, though not all individuals answered all scenarios, and analysis specific sample sizes are reported below in Table 1.

## Summary of results

1) Length of description of interventions.

Participants chose to view more information in 69% of 100 cases. When a longer description was presented the change in odds of selecting more information was 1.00 (95% CI: 0.39-2.53) which was not significant (Table 1). There was also no effect of gender, years working in conservation or whether an individual had previous experience of making similar decisions on whether individuals chose to view more information (Table 1, Figure 1).

Figure 1. Most participants chose to view more information, regardless of whether they were presented with the condition with a shorter or longer description. NA denotes individuals which saw the question but gave no answer.



2) Specificity of description of interventions.

Participants chose to view more information in 59% of 100 cases. When more specific information was presented the change in odds of selecting more information was 1.98 (95% CI: 0.78-5.15) which was not significant (Table 1). There was also no effect of gender, years working in conservation or whether an individual had previous experience of making similar decisions on whether individuals chose to view more information (Table 1, Figure 2).

Figure 2. More participants chose to view more information when shown a description with more specific information, but this difference was not significant in analyses. NA denotes individuals which saw the question but gave no answer.

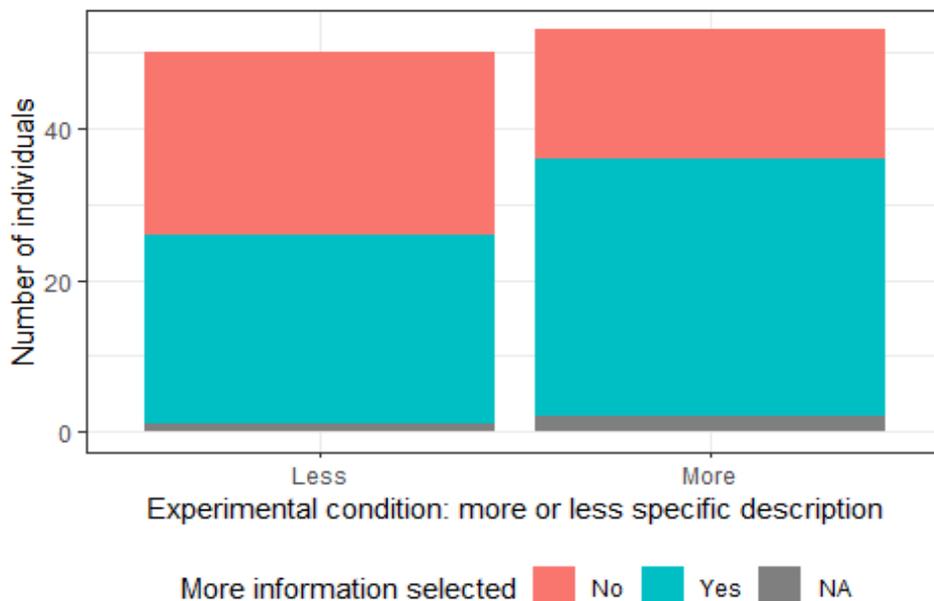


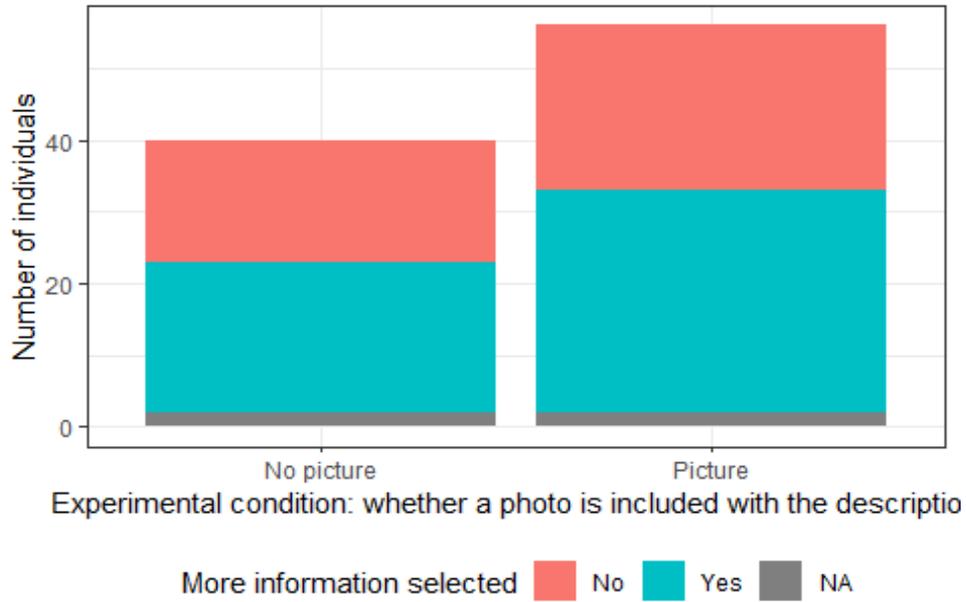
Table 1: Model coefficients and the results of Wald Type II tests for each of the four analyses

	Amount of information		Specificity of information		Presence of picture		Description or personal view	
Sample size	95		92		82		95	
Intercept	0.616 ±SE0.560		0.012 ±0.509		0.824 ±0.485		1.015 ±0.507	
Condition (Longer, more specific, picture, person)	-0.002 ±SE0.473	X <sup>2</sup> =0.000 p=0.996	0.683 ±0.478	X <sup>2</sup> =0.080 p=0.778	0.131 ±0.466	X <sup>2</sup> =0.080 p=0.778	-0.355 ±0.466	X <sup>2</sup> =2.044 p=0.153
Years in conservation	0.021 ±0.024	X <sup>2</sup> =0.776 p=0.378	0.036 ±0.025	X <sup>2</sup> =0.157 p=0.692	-0.009 ±0.023	X <sup>2</sup> =0.157 p=0.692	0.011 ±0.023	X <sup>2</sup> =1.999 p=0.157
Gender (Male)	-0.107 ±0.519	X <sup>2</sup> =0.042 p=0.837	-0.152 ±0.505	X <sup>2</sup> =1.771 p=0.183	-0.698 ±0.525	X <sup>2</sup> =1.771 p=0.183	-0.332 ±0.565	X <sup>2</sup> =0.091 p=0.763
Previous experience of similar decisions (Once)	0.027 ±0.659	X <sup>2</sup> =0.165 p=0.983	-1.017 ±0.691	X <sup>2</sup> =1.192 p=0.744	-0.328 ±0.689	X <sup>2</sup> =1.192 p=0.755	-0.280 ±0.679	X <sup>2</sup> =3.239 p=0.356
(Regularly)	0.035 ±0.614		-0.119 ±0.579		0.216 ±0.628		-0.486 ±0.589	
(Used to)	-0.255 ±0.704		-0.997 ±0.773		-0.518 ±0.665		-1.729 ±0.792	
R <sup>2</sup>	0.18		0.15		0.08		0.13	

### 3) Inclusion of a picture of interventions.

Participants chose to view more information in 56.52% of 92 cases. When a picture was present the change in odds of selecting more information from when there was no picture was 1.14 (95% CI: 0.46-2.86) which was not significant (Table 1). There was also no effect of gender, years working in conservation or whether an individual had previous experience of making similar decisions on whether individuals chose to view more information (Table 1, Figure 3).

Figure 3. Approximately half of participants chose to view more information, regardless of whether they were presented with the condition with or without an accompanying photo. NA denotes individuals which saw the question but gave no answer.



4) Information about interventions presented by a person or as a description.

Participants chose to view more information in 61.22% of 98 cases. When a person presented the information the change in odds of selecting more information was 0.70 (95% CI: 0.28-1.77) which was not significant (Table 1). There was also no effect of gender, years working in conservation or whether an individual had previous experience of making similar decisions on whether individuals chose to view more information (Table 1, Figure 4).

Figure 4. Most participants chose to view more information, regardless of whether the interventions were presented by a person or as a description. NA denotes individuals which saw the question but gave no answer.



## Conclusion

Participants chose to view more information more than half of all cases, but there was no evidence that the decision to seek more information was associated with experimental condition, gender, years in conservation or previous experience. This was a relatively small sample, but the odds ratios do not suggest that increasing the length of the initial description has any significant effect on information seeking behaviour that would be found even with a larger sample. The experimental intervention which yielded the most promising indication of increasing information seeking behaviour is increasing the specificity of information. Although the 95% confidence interval for the odds ratio was wide, the odds of choosing to view more information almost doubled when initial descriptions were more specific. A future, larger investigation might provide more evidence to support or refute this effect.