

Does **level of concern** matter in environmental policy trade offs?



Research Survey

Governments at all levels are challenged with allocating limited budgets among competing priorities. This is particularly difficult when environmental protection is one of these priorities. It often isn't obvious what the benefits are from investing in environmental protection relative to the often very obvious alternative uses for the funds.

To better understand what people are willing to pay for improvements in environmental indicators, residents of the central Okanagan were invited to participate in a survey to explore (1) the role that level of concern plays, (2) how social networks impact the likelihood of choosing an improvement option relative to the status quo, and (3) how participation in deliberation impacts the probability of an improvement option being chosen. [This fact sheet discusses whether level of concern matters in environmental policy trade offs.](#)

Options

Survey participants were presented with three future options, and asked to share their choices on different levels of improvements for various environmental indicators.

Option	Price
No Action	0
Option 1	Price 1
Option 2	Price 2

This task revealed which indicators were most important and what respondents would be willing to pay to protect them.

The scenario for 'no action' offered no environmental improvements, at no cost, while Options 1 and 2 offered different sets of improvements, but at a price. Each option had one of three possible levels of improvement for each indicator. In addition to the key choices, the survey asked participants about their social network and demographics.

Key Findings

Level of Concern Matters.

- People with similar levels of concern for the environment are willing to pay similar amounts to protect it.
- Those who are more concerned are willing to pay more. More interaction with the environment may increase how much people are willing to pay.
- There is a lot of variation between people, making it hard to predict what a particular person would pay.

Environmental Indicators

Indicators:	Level of Improvement: Less → More
Groundwater Use Proportional Use	
Aquatic Habitat # Spawning Kokanee Salmon	
Natural Habitat Area of Sensitive Ecosystems	
Rural Character Population Density in Rural Areas	

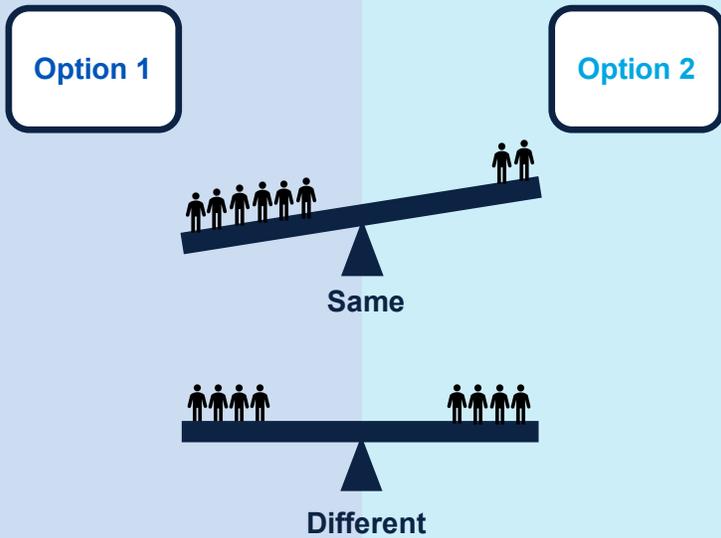


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Do people generally prefer the same conservation scenario?

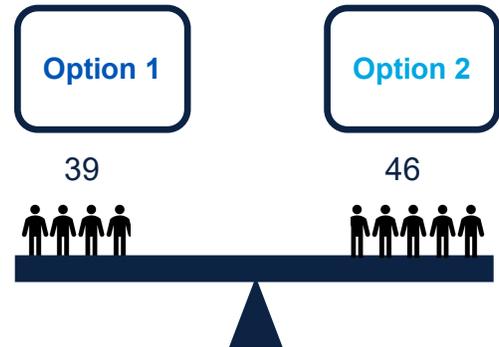


Q

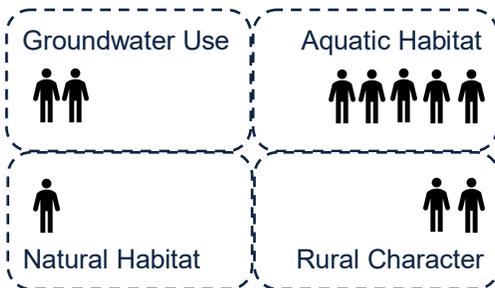
When different people are presented with a set of scenarios, do they mostly choose the same scenarios, or do they generally give different answers? If there is variation, what is causing it?

A

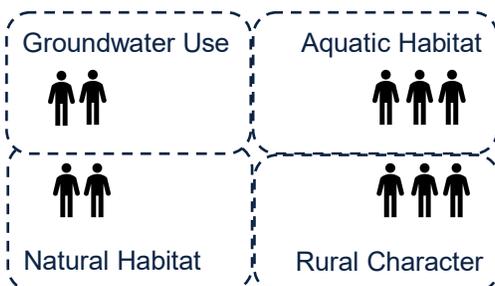
No. There is significant variation in people's preferences. Relative to the no action scenario, 39% of people prefer Option #1, and 46% of people prefer Option #2.



Do people generally choose conservation policies that improve the same environmental indicators?



or...

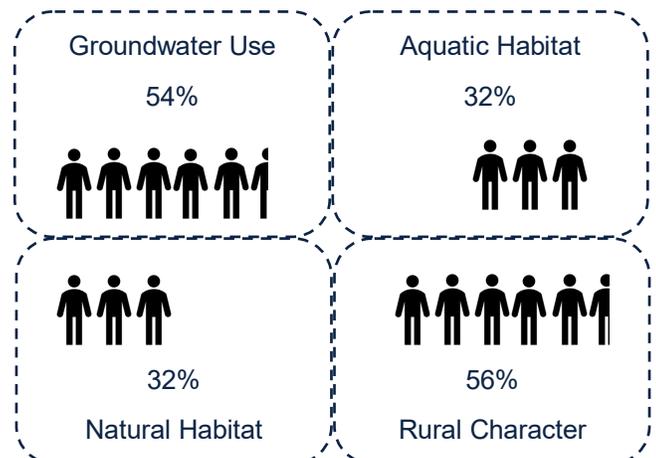


Q

When making conservation choices, do people choose programs that improve the same environmental indicators or do their answers generally vary between indicators? If there is variation, what is causing it?

A

No. There was significant variance in responses. 54% of people chose to decrease the share of groundwater use, 32% of people chose to decrease natural habitat loss, 32% chose to increase salmon return and 56% prefer a program that improves rural character.





Q

Can variations in preferences and responses be explained by a person's level of concern?

A

Yes. When grouping people by their level of concern, there are significant differences between the various levels of concern which explains at least some of the variation.

Detached
(12%)

Confident Optimist
(32%)

Engaged Optimist
(15%)

Engaged Pessimist
(26%)

Confident Pessimist
(15%)

Groupings By Level of Concern

At the beginning of the survey, people were asked questions that measured:

- Their knowledge about several environmental and economic issues in the Okanagan;
- Their perceived awareness of Okanagan environmental issues;
- Their attentiveness to local environmental messaging; and
- Their assessment as to whether jobs and economic growth are a reasonable tradeoff against the environmental impacts.

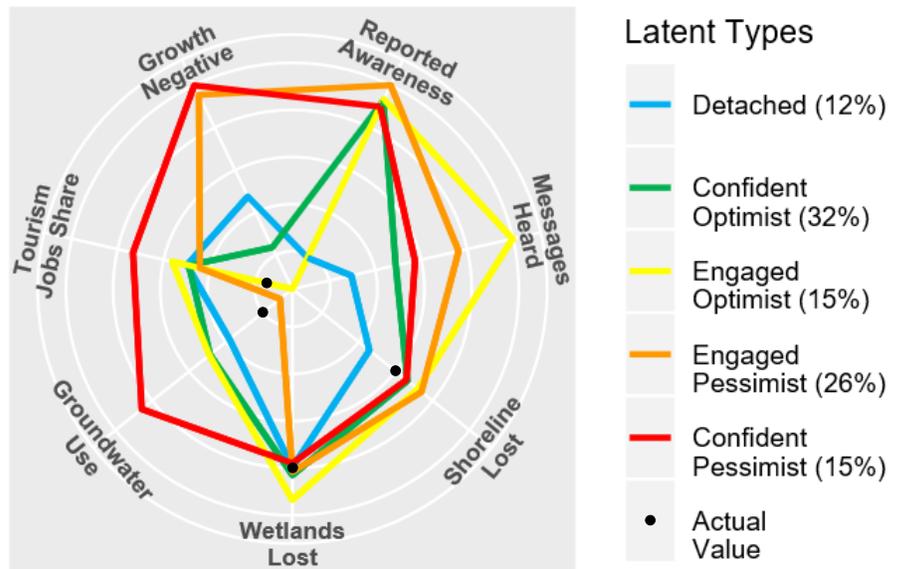
There were particularly striking differences which provided a basis for the groups in the radar plot.

The **detached** group stands out by not considering themselves particularly aware of environmental issues, not noticing environmental messages, and not being particularly favorable or unfavorable towards development.

The remaining groups were labelled based on two descriptors: engagement or confidence, and optimist or pessimist. Those who are **engaged** report being aware of Okanagan environmental issues and notice local messaging about the environment. Those who are **confident** also report being aware of environmental issues, but do not particularly notice the messaging.

Those who see the benefits of growth and development as more than offsetting the environmental impacts are **optimists**, while those that see the tradeoff in negative terms are labelled **pessimists**. Among the survey participants, there are slightly more (6%) optimists than pessimists.

Radar Plot Illustrating Latent Class Groupings



Important Environmental Indicators by Level of Concern

Level of Concern	Groundwater	Aquatic Habitat	Natural Habitat	Rural Character
Detached	X	X		
Confident Optimist	X	X	X	
Engaged Optimist	X	X	X	X
Engaged Pessimist	X	X	X	X
Confident Pessimist	X			

This table shows which components are important among the different levels of concern. People who are engaged, whether they are optimists or pessimists, are concerned about all four indicators. Interestingly, confident pessimists only cared about groundwater use.

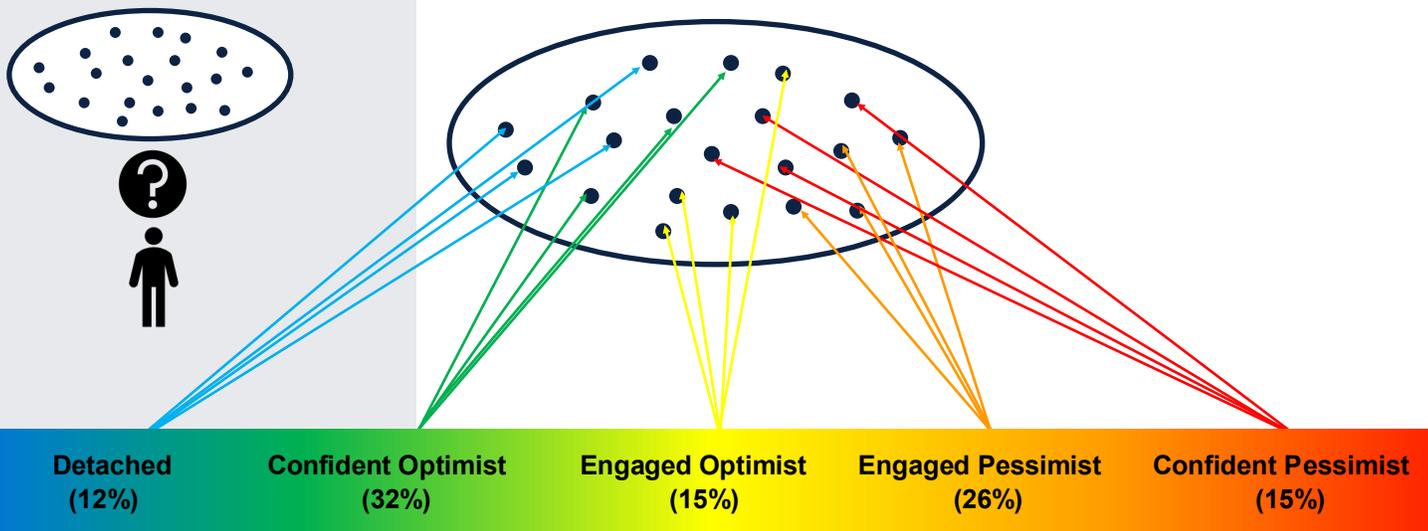
Variation poses a challenge.

This research found significant variation in preferences and responses when considering environmental improvement programs, making it difficult to predict what any individual person would be willing to pay for a conservation program, and how much they benefit from an improvement program.

Level of concern helps characterize this variation.

- Grouping people based on their level of concern for the environment seems to better characterize their preferences and responses.
- It also helps characterize how the different levels of concern benefit from conservation programs.
- The results suggest that people with similar level of concern have similar willingness to pay values.

Willingness to Pay



Average Willingness to Pay

Two important implications follow from these results. First, we can be confident that the average Okanagan resident values protecting terrestrial natural habitats and protecting aquatic habitat health. Second, there is a high degree of variability in how much the respondents are willing to pay. For local governments, these results do suggest that habitat protection and enhancing aquatic health should be priorities. It also suggests that there will be some very adamant opponents to such investments. In particular, based on the latent class groupings, many feel that investments in environmental improvements should not come at the expenses of economic growth, as the groups accounting for a majority of the survey respondents have a somewhat or strong opinion that the growth in income and jobs in the Okanagan has been a net positive, even when the environmental impacts are considered. This opposition is likely to be strongest for policies that limit the growth in water use and restrict growth in rural areas.

Level of concern **increases** the average willingness to pay.

Combined with willingness to pay estimates, this research can inform policy makers on who prefers what kind policies and who benefits the most from different conservation policies. For further information please visit the WEPGN website:

<http://www.wepgn.org/projects/view/title/measuring-and-mobilizing-citizen-preferences-for-source-water-protection>