

SUPPLEMENTARY ONLINE RESOURCES

What risks matter? Public views about climate adaptive reforestation strategies

Journal *Climatic Change*

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Online Resource 1. Overview of survey questions

This additional resource provides the complete set of questions used in the online survey to assess the dependent and independent variables of the study.

DEPENDENT VARIABLES

1) Levels of support for reforestation strategies

Q. Overall, what is your level of support/opposition for...

a) Natural regeneration; b) Tree breeding and reforestation within natural range; c) Reforestation by assisted migration within natural range; d) Reforestation by assisted migration outside of natural range; e) Reforestation with non-native species; f) Reforestation with GMO

Measurement scale: -2=Strongly oppose; -1=Oppose; 1=Support; 2=Strongly support; Unsure

INDEPENDENT VARIABLES

1) Knowledge

1.1) Knowledge of the cause of climate change

Q. Do you think that climate change is...

Measurement scale: 1) Caused mostly by human activities; 2) Caused mostly by natural changes in the environment; 3) Caused equally by natural changes in the environment and human activities; 4) Neither, because climate change isn't happening; 5) Other, please specify; 6) I don't know

1.2) Knowledge of forestry in BC

Q. For each of the following statements, please provide your best answer.

a) In BC, reforestation after commercial logging is voluntary; b) Logs are the primary forest products that are produced and exported in BC; c) Forestry is BC's largest single source of exports; d) It is currently illegal to plant tree species that are non-native to BC on public land; e) Forest policy in BC allows for genetically modified trees to be planted on public land; f) Tree breeding and improvement programs exist for most commercial tree species in BC; g) The forest industry supports more than 5% of all jobs in BC; h) Employment in BC's forest sector has increased over the past decade; i) Even though about 95% of BC's forests are publicly owned, logging rights are mostly transferred to private companies; j) In BC, Treaties provide a majority of First Nations with control over forest management on their traditional territories.

Measurement scale: 1 = Yes; 0 = No; 0 = Unsure

2) Environmental value

2.1) Environmental value orientation

Q. To what extent do you agree or disagree with the following statement?

a) Forests should be managed to meet the needs of as many people as possible; b) The primary use of forests should be for products that are useful to humans; c) Forests that are not used for the benefit of humans are a waste of our natural resources; d) Forests are valuable only if they produce jobs and income for people; e) Forests should be used primarily for timber and wood products; f) Forests give us a sense of peace and well-being; g) Whether or not I get to visit the forest as much as I would like, it is important for me to know that forests exist in BC.; h) Forests have a right to exist for their own sake, regardless of human concerns and uses; i) Humans should have more love, respect and admiration for forests; j) Wildlife, plants, and humans have equal rights.

Measurement scale: -2=Strongly disagree; 2=Strongly agree

2.2) Preferred outcome of forest management

Q. When it comes to forests in BC, what outcomes are most important to you? Please distribute 10 points between the following based on their importance to you personally (the most important is the one with most points).

*a) Maintaining environmental benefits; b) Maintaining socio-cultural benefits;
c) Maintaining economic benefits*

3) Trust in different actors

Q. In general, to what extent do you trust the following groups to provide accurate information about the implications of climate change for forest management?

a) Scientists; b) Forest sector/industry; c) Provincial government; d) Federal government; e) Environmental groups; f) Professional foresters; g) First Nations leaders

Measurement scale: 0=Not at all; 4=Extremely

4) *Perceived risk of climate change*

Q. Overall, how concerned are you about climate change?

Measurement scale: 1=Not at all; 5=Extremely

Q. How often do you worry about the potentially negative consequences of climate change?

Measurement scale: 1=Never; 5=always

Q. Within the next 25 years, how serious of a threat do you think climate change will be to...

a) you personally?; b) People in BC?; c) BC's natural environment?; d) the world population?; e) the world's natural environment?

Measurement scale: 1=Not at all; 5=Extremely

5) *Demographics*

5.1) *Age*

Q. What is your age?

Measurement scale: Numeric value 19+

5.2) *Gender*

Q. What is your gender?

Measurement scale: a) Male; b) Female; c) Prefer to self-describe; d) Prefer not to answer

5.3) *Education*

Q. What is the highest level of education you have completed?

Measurement scale: a) Elementary school, b) High school, c) Vocational/technical school, d) Some university; e) Bachelor degree (or equivalent), f) postgraduate degree; g) Other, please specify; h) Prefer not to answer

5.4) *Employment by forest sector*

Q. Are you or one of your immediate family members employed in British Columbia's forest sector?

Measurement scale: a) Yes, directly employed; b) Yes, indirectly employed (supplying goods and services to the forest sector; c) No; d) Prefer not to answer

5.5) Political orientation

Q. Many people use the terms “left” and “right” to denote different political attitudes. Here we have a scale that runs from left to right. When you think of your own political views where would you position yourself on this scale?

Measurement scale: -5=Left; 5=Right

5.6) Region of residence

Q. Which of the following best describes the area you live in?

Measurement scale: a) Urban; b) Suburban; c) Rural; d) Prefer Not to Answer

ADDITIONAL QUESTIONS

1) Ethical views

Q. Often people have different views about the ethics of different reforestation strategies. Overall, which of the following best describes your ethical view on the use of...

a) Natural regeneration) Tree breeding and reforestation within natural range; c) Reforestation by assisted migration within natural range; d) Reforestation by assisted migration outside of natural range; e) Reforestation with non-native species; f) Reforestation with GMO

Measurement scale: a) I am ethically in favour; b) I am ethically against; c) = I don't view this as an ethical issue.

2) Additional question on AM within and outside of natural range

Q. Which of the following statements best describes your views about the potential implementation of...

a) Reforestation by assisted migration within natural range; b) Reforestation by assisted migration outside of natural range

Measurement scale: a) Should be implemented right now with ongoing research and monitoring; b) We need further research before being able to implement it; c) Should be avoided because there will always be too many unknowns.

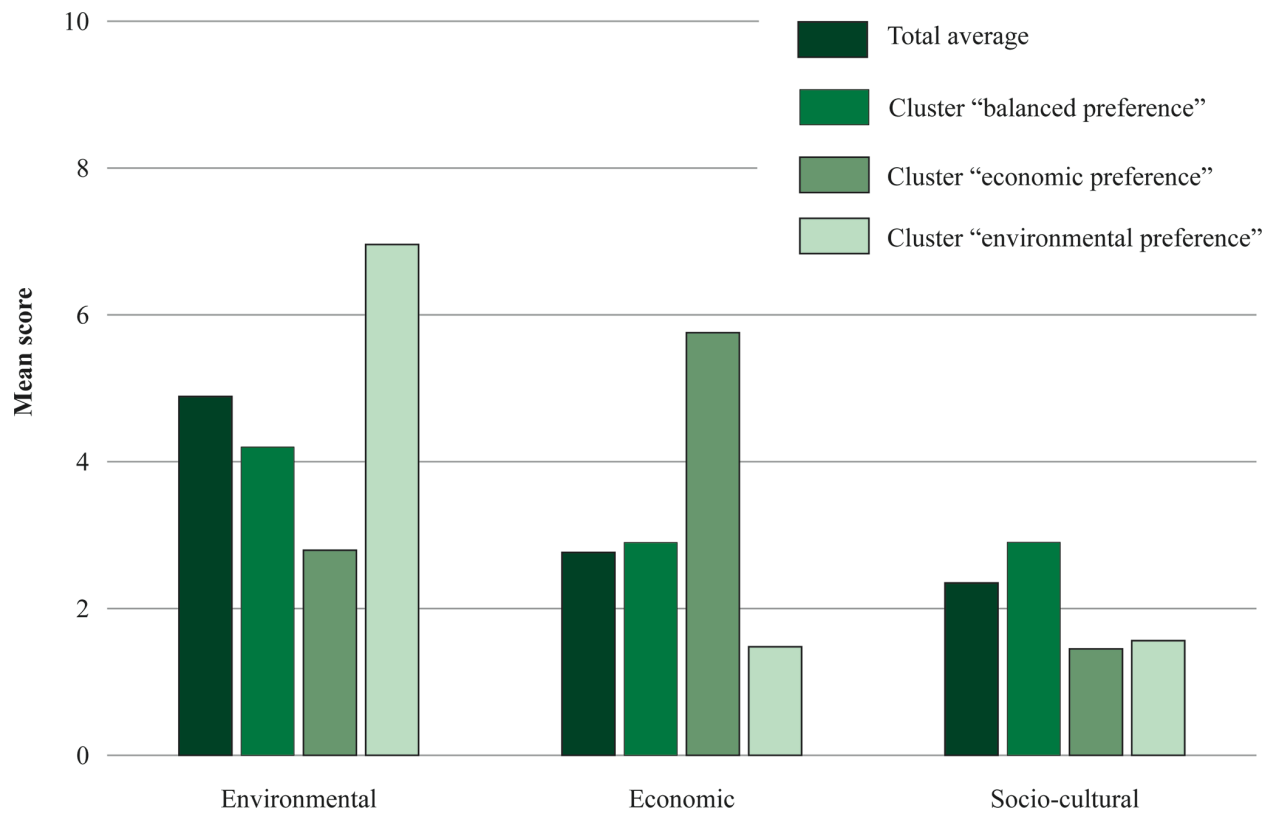
Online Resource 2. Overview of survey respondents' demographic

Variable	#	Percentage
Age		
19-34 years old	461	24.0%
35-54 years old	712	37.0%
≥ 55 years old	749	39.0%
Gender		
Male	858	44.5%
Female	1053	54.7%
Prefer to self-describe	7	0.4%
Prefer not to answer	8	0.4%
Education		
Elementary school	10	0.5%
High school	350	18.2%
Vocational/technical school	403	20.9%
Some university/college	342	17.8%
Bachelor's degree	518	26.9%
Graduate degree	278	14.4%
Prefer not to answer	25	1.3%
Employment in forest sector		
Employed (directly or indirectly)	109	5.7%
Not employed	1798	93.4%
Prefer not to answer	19	1.0%
Political orientation		
0 (left)	70	3.6%
1	102	5.3%
2	171	8.9%
3	182	9.4%
4	173	9.0%
5 (Neutral)	611	31.1%
6	198	10.3%
7	177	9.2%
8	117	6.1%
9	59	3.1%
10 (right)	66	3.4%
Region of residence		
Urban	974	50.6%
Suburban	762	39.6%
Rural	190	9.9%

Online Resource 3. Results of the true or false questions on forestry in BC. The correct answers are indicated in parenthesis.

Questions	Correct answer	Percentage of correct answer
1) In BC, reforestation after commercial logging is voluntary.	FALSE	50.7%
2) Logs are the primary forest products that are produced and exported in BC.	FALSE	16.7%
3) Forestry is BC's largest single source of exports.	TRUE	52.2%
4) It is currently illegal to plant tree species that are non-native to BC on public land.	TRUE	45.6%
5) Forest policy in BC allows for genetically modified trees to be planted on public land.	FALSE	14.7%
6) Tree breeding and improvement programs exist for most commercial tree species in BC.	TRUE	49.2%
7) The forest industry supports more than 5% of all jobs in BC.	TRUE	54.2%
8) Employment in BC's forest sector has increased over the past decade.	FALSE	39.6%
9) Even though about 95% of BC's forests are publicly owned, logging rights are mostly transferred to private companies.	TRUE	59.2%
10) In BC, Treaties provide a majority of First Nations with control over forest management on their traditional territories.	FALSE	15.3%

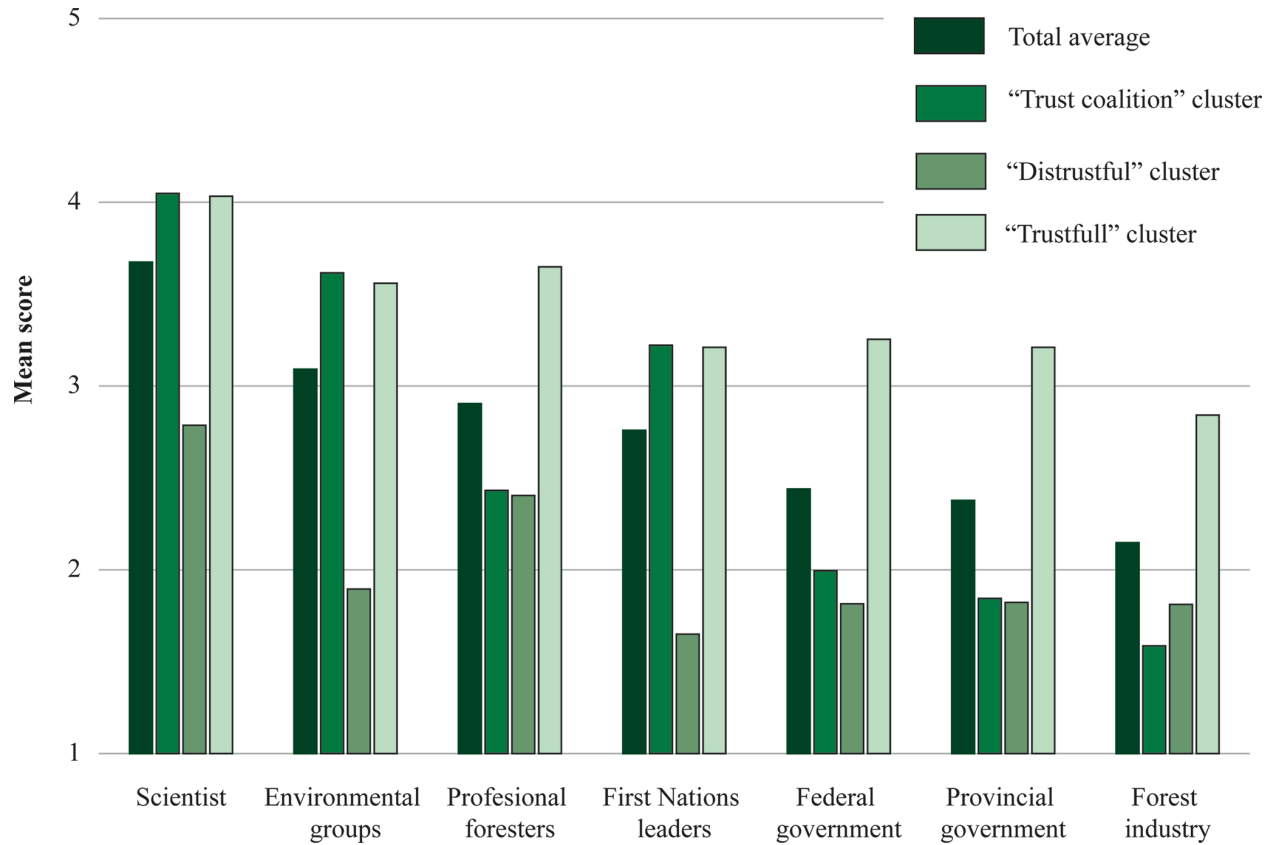
Online Resource 4. Mean scores organized by clusters of respondents based on the importance of different forest management outcomes.



Online Resource 5. Environmental value scale items and factor loadings. Factors' loadings in bold indicate that they have been selected in a factor.

	Loading	
Factor 1 (Anthropocentric, $\alpha= 0.79$)		
Forests should be managed to meet the needs of as many people as possible.	0.343	
The primary use of forests should be for products that are useful to humans.	0.754	-0.151
Forests that are not used for the benefit of humans are a waste of natural resources.	0.610	-0.221
Forests are valuable only if they produce jobs and income for people.	0.617	-0.266
Forests should be used primarily for timber and wood products.	0.699	-0.181
Factor 2 (Biocentric, $\alpha= 0.79$)		
Forests provide a sense of peace and well-being.	-0.121	0.716
Whether or not I get to visit the forest as much as I would like, it is important for me to know that forests exist in BC.	-0.144	0.664
Forests have a right to exist for their own sake, regardless of human concerns and uses.	-0.185	0.671
Humans should have more love, respect and admiration for forests.	-0.141	0.784
Wildlife, plants, and humans have equal rights.		0.503

Online Resource 6. Mean scores organized by clusters of respondents based on the level to which they trust groups of actors when it comes to providing accurate information about the implications of climate change for forest management, with 1=not at all and 5=extremely.



Online Resource 7. Scale items and factor loadings of respondents' support or opposition to climate adaptation strategies. Factors' loadings in bold indicate that they have been selected in a factor.

	Loading			
	Levels of support		Ethical views	
Factor 1 (Conventional strategies + AM within species range)	$\alpha=0.60$		$\alpha=0.66$	
Natural regeneration	0.442	–	0.545	
Local seed breeding	0.669	–	0.679	
AM within natural range	0.669	0.273	0.649	0.184
Factor 2 (Unconventional strategies + AM outside of species range)	$\alpha=0.69$		$\alpha=0.58$	
AM outside of natural range	0.332	0.608	0.393	0.495
Reforestation with non-native species		0.739		0.578
Reforestation with GMOs		0.627		0.605