Climate Change and Lyme Disease

Communications guide

Case study from Southern Manitoba

Prairie
Climate Centre

How does climate change affect Lyme disease?

Lyme disease is an illness caused by bacteria that is spread from host animals to humans, most often in Eastern and Central Canada by blacklegged ticks.

Climate change is increasing the spread of Lyme disease:

- Longer, hotter summers and more mild winters increase the ticks' rates of survival, growth and reproduction. This means that they can survive and establish populations in areas where they previously couldn't, and increase their numbers where they were already established.
- Longer summers give a longer season where ticks are active and people are outdoors
- Increasing range, abundance, and activity of rodent, bird, and deer hosts that carry the disease.

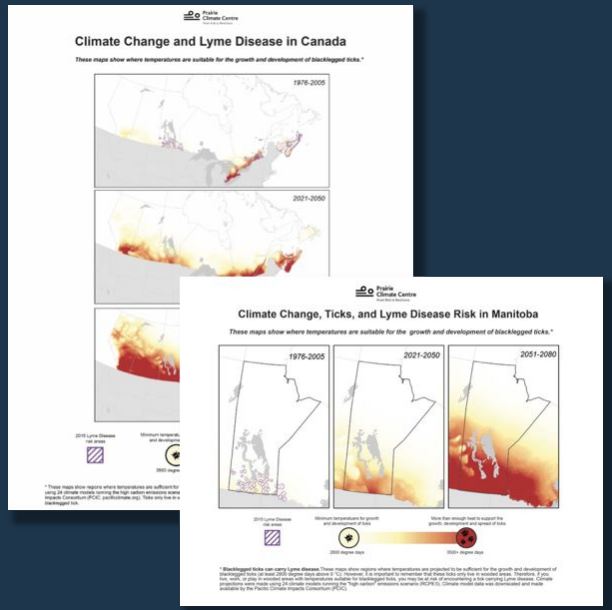
Resources on Lyme disease and climate change

Available at *climateatlas.ca/lyme-disease-under-climate-change*

Maps of Canada and Manitoba
showing the potential spread of blacklegged ticks

A short article
on Lyme disease and climate change

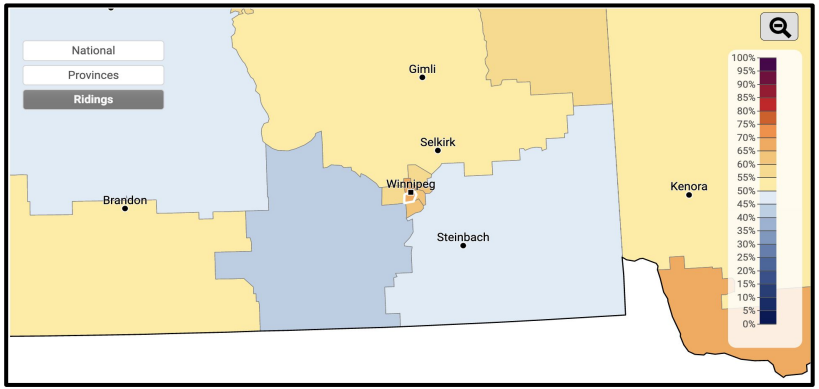
"A Ticking Clock" video
featuring doctors, infectious disease experts, and community members



Focus groups on climate change and Lyme disease in southern Manitoba

We conducted six focus groups in Winnipeg, Brandon, and Morden-Winkler. Focus groups were organized by people of “high” and “low” concern about climate change.

Previous climate opinion research shows high climate uncertainty and skepticism in southern Manitoba, particularly in rural areas.



This map shows what percentage of people believe that “Earth is getting warmer partly or mostly because of human activity” in the federal ridings in the region. (Mildenberger et al 2016)

Perceptions of Lyme disease

Focus group results found that:

- Participants had generally low knowledge of Lyme disease; Increasing awareness but low concern about the risk of the disease
- Some people had high levels of awareness and knowledge on Lyme disease (particularly those who had known someone with the disease)
- It was common to report knowing someone who has had the disease
- Rural groups had more awareness and preventative behaviours related to ticks than urban groups.
- People feel like there is a need for education among both the public and the medical community

Insights for Communications

- While disease awareness is increasing, more specific education and 'myth busting' information on Lyme disease is needed.
- Emphasize the benefits and ease of adopting preventative behaviours (e.g. deet repellant, tick checks) if risk messaging is not sufficient to motivate change
- For climate skeptical audiences, it might be useful to lead with health risk and adaptation information

Perceptions of climate change

Focus group results found:

- A wide range of knowledge on climate change, with a general superficial understanding – and in some cases deep misunderstanding – of the issue.
- Few people denied climate change outright, but some degree of skepticism was present, mostly (but not exclusively) in the low climate concern groups and those in more rural areas.
- Uncertainty around climate change was linked to a perceived lack of credibility, reliability or consensus in climate science as well as a lack of understanding of science.
- People often perceived climate change as distanced from themselves in space, time, or geography.

Insights for Communications

- More science education and communication on climate change is needed in southern MB.
- Climate change perspectives are complex, intersectional, and varying in a manner that creates a spectrum of viewpoints.
- Climate communicators should promote overall scientific literacy, while paying specific attention to the importance of framing messages in an accessible and relatable manner.
- Results suggest that perhaps localizing and personalizing climate change messages is useful – and is supported by the literature – yet further research is needed to understand how psychological distancing might function within the Prairies especially in the context of other potential drivers (e.g. faith, political beliefs, views of nature, etc).

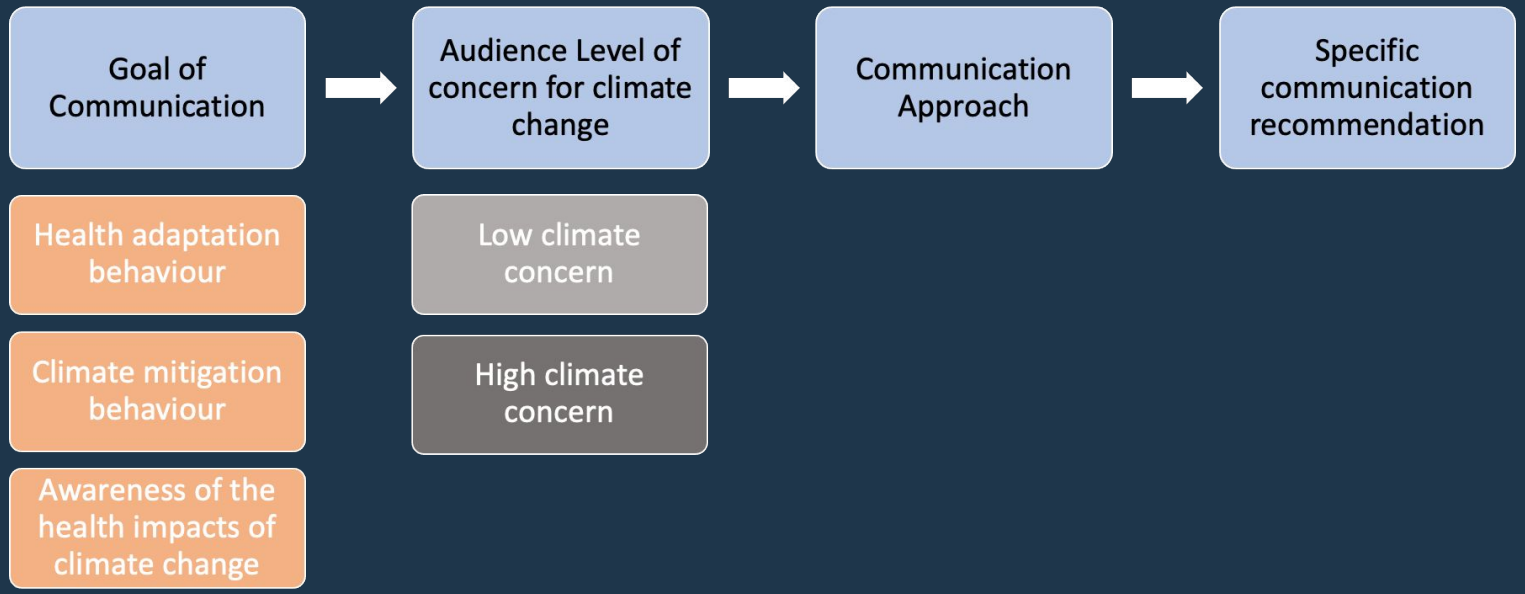
Tips for communications on Lyme disease and climate change

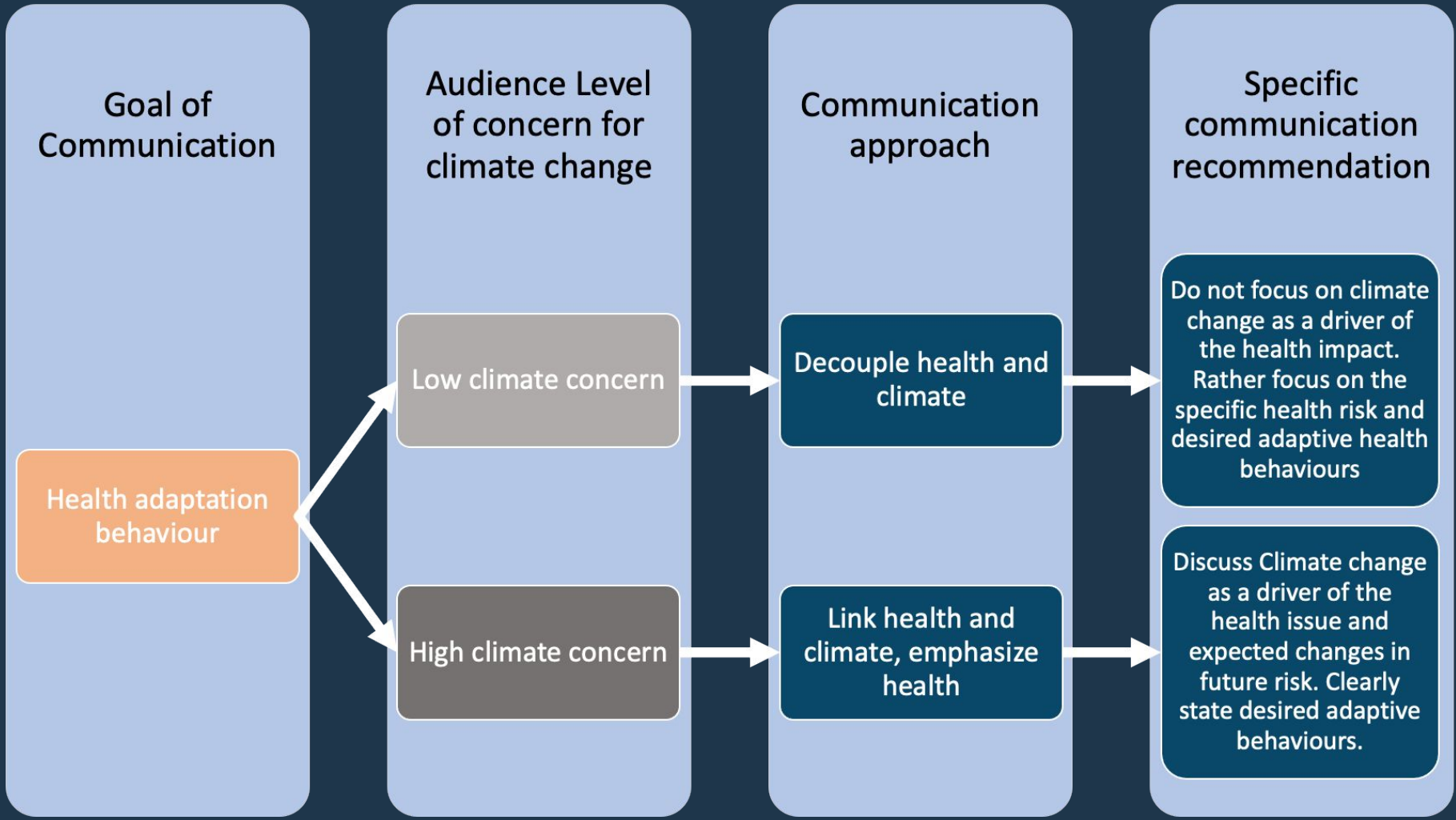
We developed communications materials focusing on the connection between climate change and Lyme disease, and tested them with focus group participants.

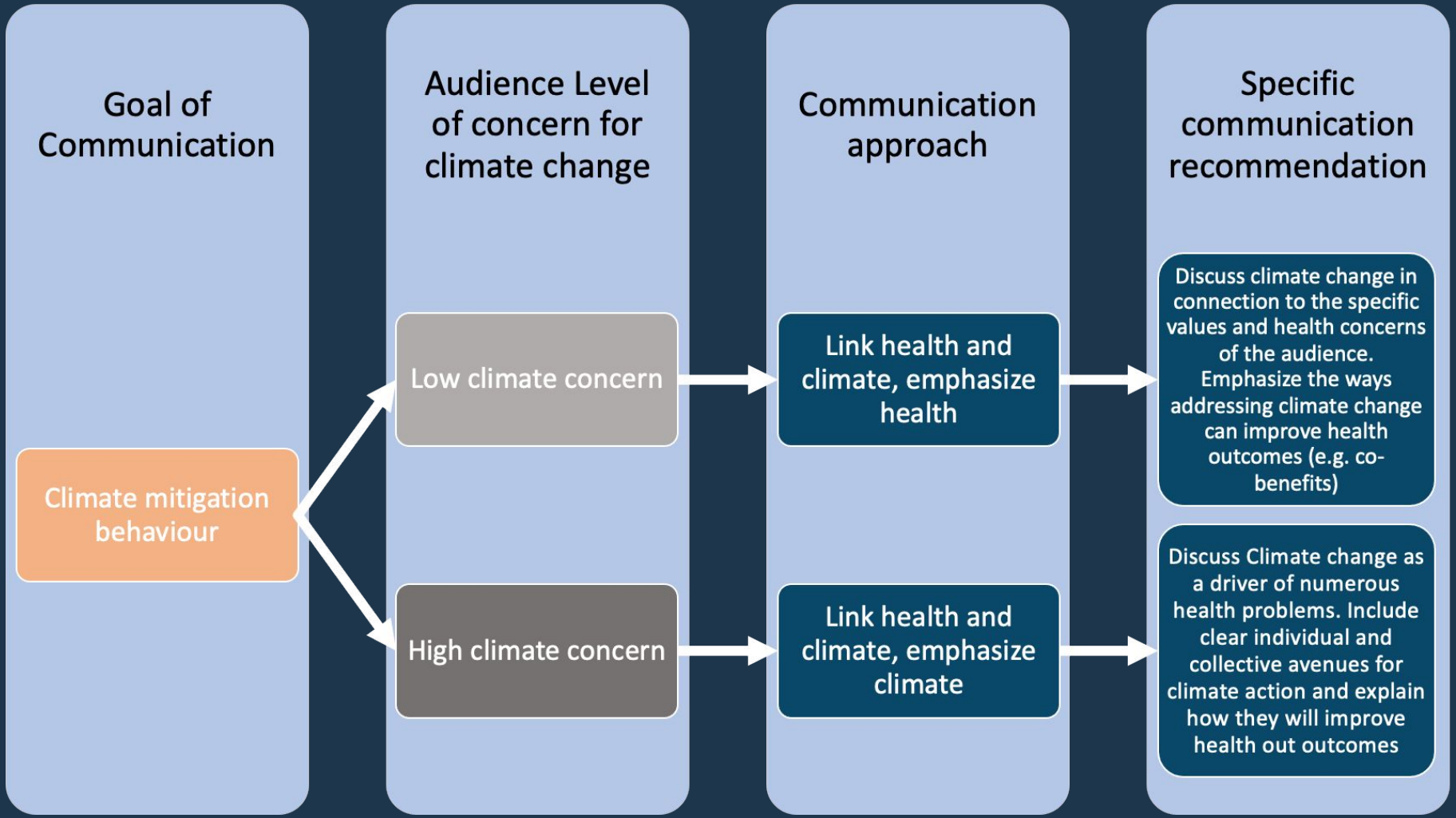
Results led to the following recommendations, dependent on the goal of the communications.

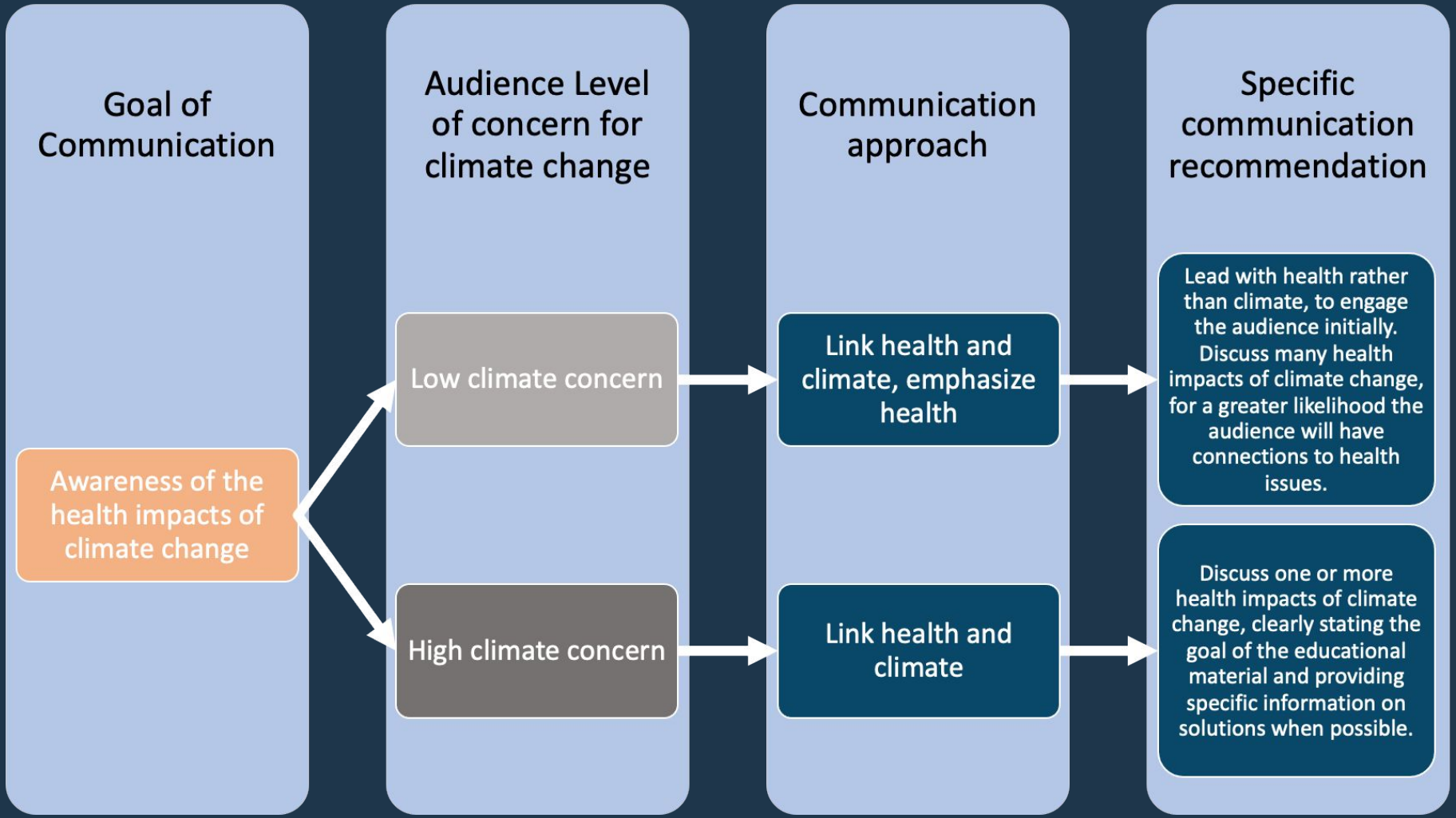
Tips for communications on Lyme disease and climate change

Health officials and climate communicators may approach and present the content differently–by separating or connecting climate and health risks–according to their respective goals and audiences.




Goal of Communication
Audience Level of concern for climate change
Communication approach
Specific communication recommendation
Health adaptation behaviour
Low climate concern
High climate concern
Decouple health and climate
Link health and climate, emphasize health
Do not focus on climate change as a driver of the health impact. Rather focus on the specific health risk and desired adaptive health behaviours
Discuss Climate change as a driver of the health issue and expected changes in future risk. Clearly state desired adaptive behaviours.


Goal of Communication
Audience Level of concern for climate change
Communication approach
Specific communication recommendation
Climate mitigation behaviour
Low climate concern
High climate concern
Link health and climate, emphasize health
Link health and climate, emphasize climate
Discuss climate change in connection to the specific values and health concerns of the audience. Emphasize the ways addressing climate change can improve health outcomes (e.g. co-benefits)
Discuss Climate change as a driver of numerous health problems. Include clear individual and collective avenues for climate action and explain how they will improve health out outcomes


Goal of Communication
Audience Level of concern for climate change
Communication approach
Specific communication recommendation
Awareness of the health impacts of climate change
Low climate concern
High climate concern
Link health and climate, emphasize health
Link health and climate
Lead with health rather than climate, to engage the audience initially. Discuss many health impacts of climate change, for a greater likelihood the audience will have connections to health issues.
Discuss one or more health impacts of climate change, clearly stating the goal of the educational material and providing specific information on solutions when possible.

Recommendations for different communications mediums

The video was generally seen as the most engaging and easy to understand, while the series of maps were the most difficult to understand. Specific recommendations for each include...

Articles and writing

- Use simple language as much as possible when communicating climate causes and impacts
- Pay attention to which sources (academic or non-academic) are most credible to different audiences

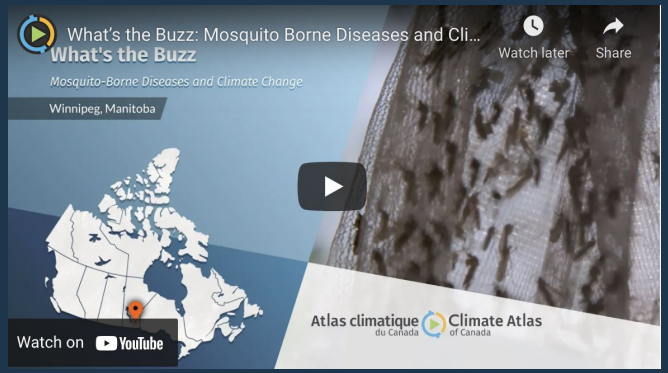
Video

- Create different length videos for different audiences
- Include relatable messengers, particularly those with lived experience of health impacts
- Share content across platforms to target different audiences

Maps

- Pay attention to the responses to certain colour ramping on climate maps
- Accompany maps with clear information on how to interpret them
- Embed maps in other materials where they can be contextualized for unfamiliar audiences

Other infectious disease and climate change resources



Most Canadians think of these diseases carried by mosquitoes, called mosquito-borne diseases (MBD), as being limited to warm southern climates, like malaria or dengue fever. While it is true that they are far more common in the tropics, warming temperatures and increasing precipitation under climate change in Canada are expected to increase the presence of some MBD right here at home

climateatlas.ca/mosquito-borne-diseases-and-climate-change

More information

More information on these focus group results and implications can be found in these two papers:

Cameron, L., Rocque, R., Penner, K. et al. Public perceptions of Lyme disease and climate change in southern Manitoba, Canada: making a case for strategic decoupling of climate and health messages. BMC Public Health 21, 617 (2021). https://doi.org/10.1186/s12889-021-10614-1

Cameron L., Rocque R., Penner K., & Mauro I. (2021). Evidence-based communication on climate change and health: Testing videos, text, and maps on climate change and Lyme disease in Manitoba, Canada. PLoS ONE.