

# Indigenous Knowledge in Emergency Management

<p><b>The United Nations Sendai Framework for Disaster Risk Reduction, 2015-2030</b></p> <p>One goal of this framework is:</p> <p>“To ensure the use of traditional, Indigenous and local knowledge and practices, as appropriate, to complement scientific knowledge in disaster risk assessment and the development and implementation of policies, strategies, plans and programs of specific sectors, with a cross-sectional approach, which should be tailored to localities and to the context.” (15)</p>	<p><b>2022 Auditor General Report of Canada: Emergency Management in First Nation Communities</b></p> <p>“...The department (Indigenous Services Canada) did not know whether it was meeting its commitment to ensure that First Nation communities had access to comparable emergency services and culturally appropriate services.” (18)</p>	<p><b>Indigenous-focused Scholarship</b></p> <p>“...Emergency management must learn from critiques of dominant development strategies by accepting the value of existing capacities in Indigenous communities and working towards relationships and processes that apply new strategies and ways of working.” (3)</p>
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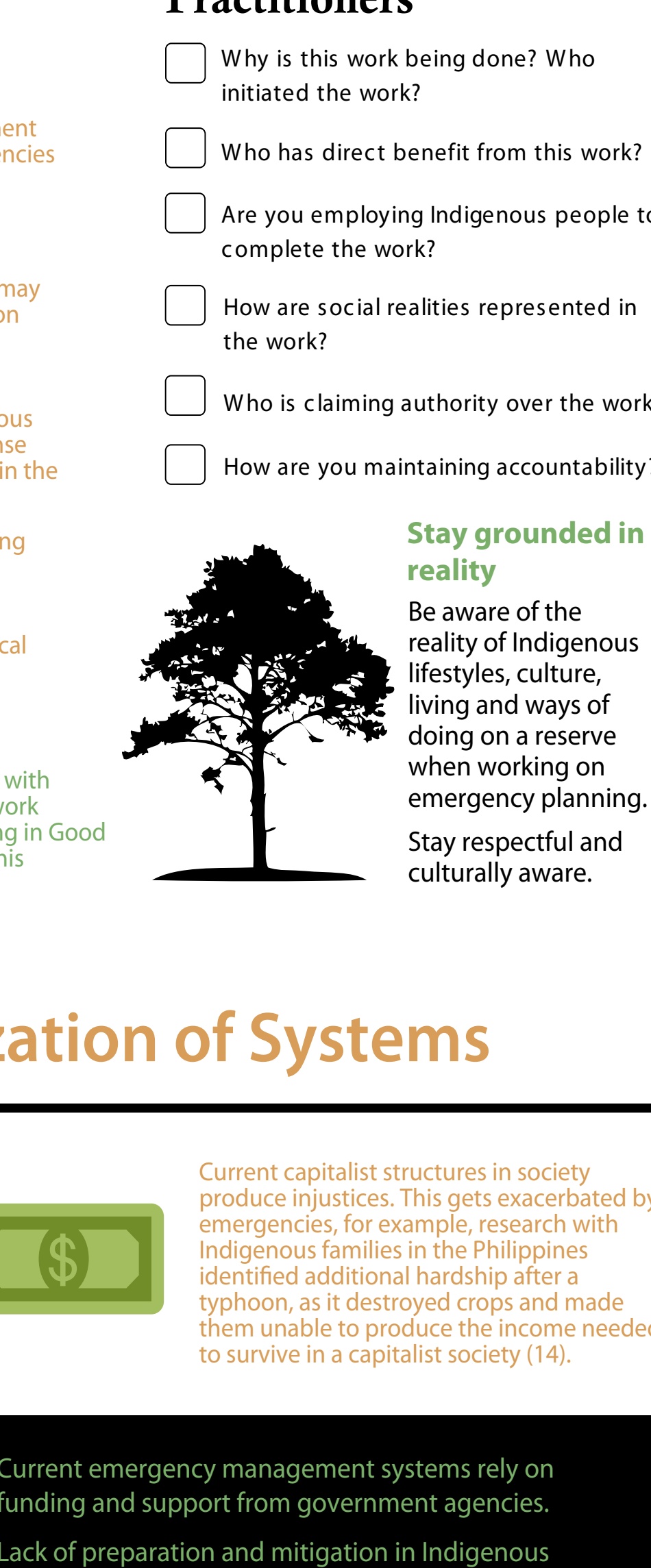
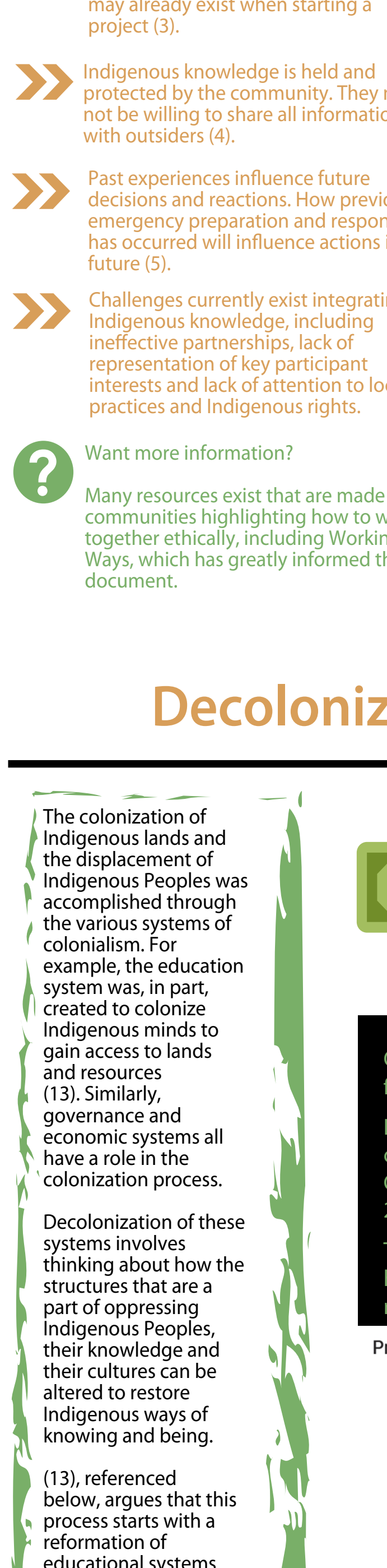
This report is the result of research conducted by University of Manitoba Masters student, **Tia Wilson**, under the direction of **Dr. Dan Henhawk** and **Dr. Jay Johnson**. The research was funded by **Callian** under the **Mitacs Business Strategy Internships (BSI)** program.

## KEY CONSIDERATIONS

- DEFINING INDIGENOUS KNOWLEDGE**  
There is almost definition of what constitutes Indigenous knowledge (4).
- KNOWLEDGE IS INDIVIDUAL-SPECIFIC**  
Not all Indigenous knowledge is the same. Knowledge is built upon relationships to place.
- KNOWLEDGE IS RELATIONAL**  
Indigenous knowledges are built upon the respectful and reciprocal engagement with (a) more than human world (4).
- KNOWLEDGE WORK TOGETHER**  
Indigenous knowledges do not have to work alone. It can work in tandem with Western knowledges. Two-Eyed Seeing or Walking with Two Legs provide frameworks to think about relationships between these knowledges.
- CULTURES ARE DYNAMIC**  
Indigenous culture and knowledges are not frozen in time. Practices, both of which knowledge emerge from.

“Knowing into Indigenous and local knowledge of roads, watercourses, weather patterns and other criteria, is a must if government hopes to be more effective in responding to extreme weather events going forward.”

*Abbott & Chapman (13)*



## A Framework for Indigenous Emergency Preparedness

This info-graphic provides a basic framework to help guide engagement and relationship building with Indigenous communities while recognizing the complexity of issues surrounding this work in the context of emergency management.

This is only a starting point. The information provided is brief to encourage questions and curiosity which can be further explored in the resources provided and beyond.

## Ethical Relationship Building

There are ethical implications for engagement with Indigenous communities and their knowledges. Within research, this concerns relate to who initiates the research project, who will benefit and to what degree, how will Indigenous Peoples be represented within the project, will Indigenous knowledges be respected as legitimate, and how will accountability be maintained (8). There is also the critical question of ownership and control for Indigenous communities regarding information informed by their knowledges (7).

**SLOW DOWN!**

Relationship building, developing emergency response plans, and implementing preventative measures takes time.

Proceed slowly and thoughtfully.

### Questions for Practitioners

- Why is this work being done? Who initiated the work?
- Who has direct benefit from this work?
- Are you employing Indigenous people to complete the work?
- How are social realities represented in the work?
- Who is claiming authority over the work?
- How are you maintaining accountability?

**Stay grounded in reality**

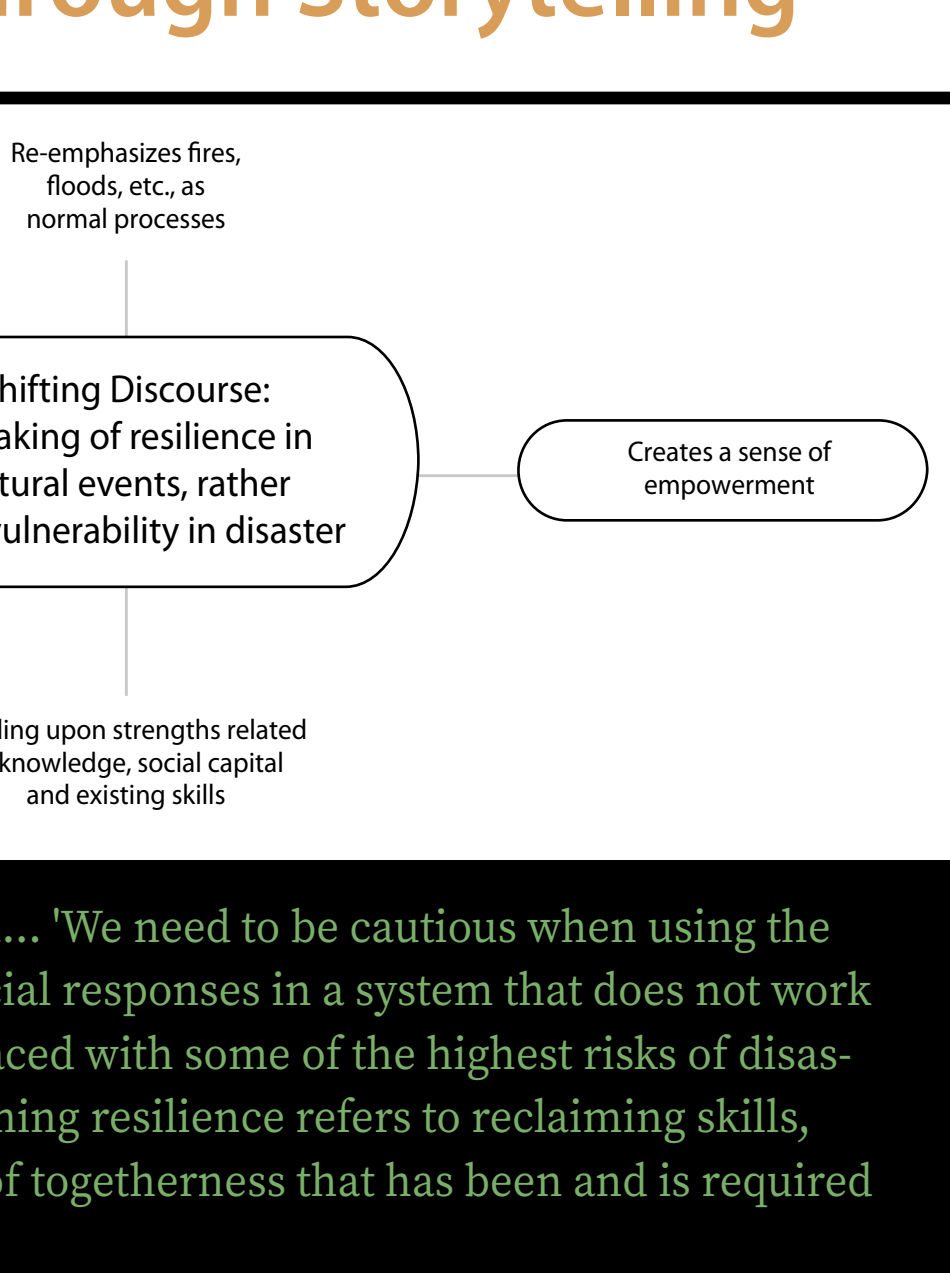
Be aware of the reality of Indigenous lifestyles, culture, living and ways of doing on a reserve when working on emergency planning. Stay respectful and culturally aware.

## Decolonization of Systems

The colonization of Indigenous lands and the displacement of Indigenous Peoples was accomplished through the various systems of colonialism. For example, the education system was, in part, created to colonize Indigenous minds to gain access to lands and resources (13). Similarly, governance and economic systems all have a role in the colonization process.



Current capitalist structures in society produce injustices. This gets exacerbated by emergency, for example, research with Indigenous families in the Philippines identified additional hardship after a typhoon, as it destroyed crops and made them unable to produce the income needed to survive in a capitalist society (14).



Current emergency management systems rely on funding and support from government agencies. Lack of preparation and mitigation in Indigenous communities was identified in the 2013 Report of the General Auditor of Canada, and was not resolved in the 2022 report. This report also identified that Indigenous Services Canada has spent 3.5 times more on emergency response and recovery than preparation.

Decolonization of these systems involves thinking about how the structures that are a part of oppressing Indigenous Peoples, their knowledge and their cultures can be altered to restore Indigenous ways of knowing and being.

(13), referenced below, argues that this process starts with a reforming of educational systems alongside an analysis of colonialism. How then might emergency management be decolonized in keeping with Indigenous critiques?

Seeing Indigenous knowledge and scientific knowledge in opposition to each other, or as being distinctly different, perpetuates power dynamics and conceptualizes and fixes them as to not being mergeable, compatible or equally valid (14).

Concepts such as Two-Eyed Seeing and Walking with Two Legs can help reduce the power structures found in current ways of conceptualizing knowledge.

### TWO-EYED SEEING

A term coined by Miikwac'ewik: Awenikwe'iwak refers to the idea of 'seeing' the world through an Indigenous and Western lens. This perspective suggests that there must be a recognition of Indigenous knowledges and an incorporation of the knowledges of both Indigenous and Western knowledges into the living in the world, addressing challenges and making decisions (16).

### WALKING WITH TWO LEGS

Framework conceptualized by Elder Ronald E. Ignace that argues for a balance between Indigenous knowledges and Western scientific knowledge. This framework argues for a re-imagining of the role of Western science as a way of elevating Indigenous knowledges and reconciliation. As well, it advocates for Indigenous stewardship of systems, and Indigenous led restoration. E.g. histories of fire stewardship (17).

## Top-Down vs. Bottom-Up Approaches

Typically, emergency preparedness utilizes top-down approaches (organization implementing on community), while bottom-up approaches (community led) are more beneficial.

It has been found that top-down approaches were perpetuating colonialism and were not visible for the community and did not draw upon their socio-cultural capacities, including a lack of participation in emergency preparedness planning (18).

## The Case of Taiwan

Top-down measures that are approved by high level, central government have failed to meet the needs of individuals in Indigenous communities in an emergency (20).

For example, shelters that were planned for use during an emergency were not structures that would support the Indigenous way of living within clan systems (20).

## The Case of Yunesit'in First Nation

A community-led and developed fire stewardship program was implemented to reintegrate Indigenous Land Management practices in British Columbia.

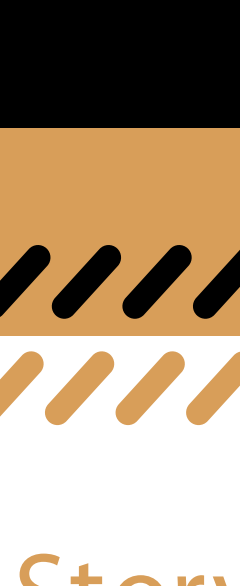
This program has been monitored and deemed a success through measures that implemented area stewarded, employed community, created program sustainability, and included knowledge mobilization (19).

Bottom-up Approach

## Invisible Institutions

Invisible institutions are understood as unofficial roles in emergency response created through Indigenous ways of understanding and acting. While not a formal institution, they play key roles in response and should be understood and worked with to strengthen planning for emergencies (24).

## Elders & Youth Working Together



Emergency Management and Disaster Risk Reduction Planning can span generations. A case study in Siksika Nation, Alberta, showed how having a shared space to collectively look for solutions and exchange cultural knowledge(s) were beneficial in Disaster Risk Reduction Planning. Some lessons learned about traditional food preservation and problem solved to help prepare for the future. (21).

## Are we communicating?

Emergency Management Planning relies on a lot of collaboration between agencies, so communication is key. Consider how federal, provincial, non-profit, for-profit and community organizations are communicating to prepare. How can communication be clarified and simplified to achieve goals? What processes and cultural structures need to change?

## Tech Talk

Technology and Indigenous knowledge can coexist. Researchers are engaged in analyzing the effectiveness of utilizing Geographic Information System (GIS) to engage and mobilize community capacity in emergency management. Examples include Flood Risk Mapping in Viet Nam (22) and flood vulnerability mapping in South African informal settlements (23).

A call for more participatory and accessible methods of integrating technology into emergency management planning comes from researchers, in order to highlight valuable Indigenous knowledges (23).

## What could new institutional structures look like?

Although typically discussed in the abstract, here are some key ideas from Howitt of what they may include:

- Designed by users of the institution
- Focused on integration
- Non-hierarchical
- Stakeholder-controlled
- Multiple authorities are accountable
- Structure is flexible and anticipates change

## Moving Forward: Resilience Through Storytelling



"Resilience is a contested term... We need to be cautious when using the term resilience to describe social responses in a system that does not work for those that continue to be faced with some of the highest risks of disasters on Turtle Island! ...reclaiming resilience refers to reclaiming skills, spaces, language and a sense of togetherness that has been and is required to face a disaster." (21)

## Stories Hold Power

Stories and the act of storytelling is important to Indigenous Peoples and the continuance of Indigenous knowledges and cultures. Stories not only transfer knowledge from one person to another, or one generation to another, but they reify the relationship the storyteller has with those human and non-human relations within the story. They are a method of coming to know and as a way of understanding the interrelationships within the world. Stories have a significant role in current movements of resistance to colonialization and cultural resurgence.

"It quickly became clear to Jodene that managing in a disaster involves a whole different language, and protocols that were completely new to her. 'I was getting calls from various agencies asking if I had my EOC (Emergency Operations Centre) and ESS (Emergency Social Services Centre) open (Emergency Operations Centre, Emergency Social Services Centre), and didn't know what those acronyms were. I was completely lost. I just wanted someone to slow down and explain what all this was and what to do" (6).

"Stories hold within them their knowledge while simultaneously signifying relationships... stories can never be decontextualized from the teller." (27)

## Examples of Storytelling in Research

Storytelling is increasingly being used as a method to engage communities in community-based participatory research. Christensen suggests that storytelling is helpful to share information "in a way that 'makes sense, that speak to, and speak with the communities in which the research takes place'" (28).

A program in Siksika Nation, Alberta, utilized storytelling to gain power in emergency preparedness and work towards solving issues the communities faced in emergencies (11).

In Galiwinku, Australia, researchers utilized yarning circles and conversations with community members to summarize ideas the community had regarding disaster risk reduction and Indigenous knowledge. They learned about how disaster risk reduction can relate to relationship and how colonialization has made preparing more difficult for the community (18).

Stories tracing understanding of Indigenous fire practices within the boreal forest have been recorded throughout research. A team of researchers have compiled these stories into a review that allows for further understanding of practices, which can be shared through wildfire. Stories allow for lessons of fire as an agent to be identified and shared (28).

## Next Steps

- Longitudinal studies and community-based monitoring are key for developing long-term relationships and the facilitation of knowledge sharing and skill development (30).
- Storytelling can act as a way to develop adaptive capacities and continue transmission of land-skills or knowledge, acting as a method of cultural resurgence (30).
- Focusing on community based programming can increase adaptive capacity through relationship building, consent building and development of shared agendas (Murennan, Mark & Scott).

## On Fire

Prior to colonization, Indigenous people had their own methods of fire management, including cultural burning. With colonialization came fire suppression in fire management (28).

Indigenous people view fire as an agent, capable of creating order in the environment through methods of destruction and creation (28).

Fire is part of a natural cycle, providing forest renewal and sustaining food sources. It is used to improve biodiversity when used with intention (19).

With colonization and the establishment of the capitalist economy, fire started to be viewed only as something negative, as people focused on its ability to destroy homes and livelihoods (Nikolaïk & Myers Ross). Fire suppression became the common method of managing forests (28).

Shifts are occurring within fire management practices. Advocating for cultural burning and fire Stewardship Plans may allow for reclaiming of practices and responsibility of land to be returned to Indigenous Peoples.

Responsibilities for Fire Mitigation are inconsistent. Provincial governments are responsible for Fire Management, but treaty agreements fall within federal jurisdiction (28).

## Our focus should shift away from avoiding fire, by developing understanding and relationship with fire.

## A Story of Inquiry

What better way to communicate our research journey, than through a story:

My name is Tia. I am a graduate student and have had a career focused on natural resource management working within various government agencies. Last year, my advisor, Jay, approached me about working on this collaborative research project with Dan and Callan regarding Indigenous Knowledge and Emergency Management. I was excited, but hesitant. What did I really know about the topic? Was I the best person to be speaking about this, as a settler on this land?

I live in a small town in Northwestern Ontario and a few years ago I had to flee my home on short notice due to a wildfire. I saw the smoke at 3 p.m. from my window, and by 9 p.m. the whole community was headed down the only highway out of town. I wasn't prepared to leave. I didn't consider having a go-bag for instances like these. As the smoke billowed, I paced around my house trying to figure out what to pack—my mind taken over by the anxiety of the rapidly growing fire. I didn't know where I was going, how long I'd be gone or what was important to bring.

My friends and family all have different evacuation stories than I do. I floated around from place to place, staying with friends who graciously opened their doors, and tourism camps that welcomed evacuees with open arms. The uncertainty left me exhausted. Every day we all gathered together to wait for the daily update dreaming we could go home, but nervous about what may or may not be there when we arrived. After over a week of being away, we were allowed to return. It may have taken some time for us to get all our utilities working again, but we went home smiling to our fridges full of rotten food.

When emergencies happen, you don't know what to expect. The planning and mitigation of the events is key to helping communities and individuals thrive and be safe when the unexpected occurs. Many Indigenous communities are more remote than my little town, so I can only imagine logistics are more complicated and may come with additional uncertainty. My own personal experiences have shaped how I have compiled the information in this info-graphic.

Dan, Jay and I had many long discussions at the start of this project. We wondered how we could communicate information in a way that would not unintentionally create harm or perpetuate neocolonialism in emergency management. The way we tackled these fears was to create a robust section on doing work ethically. One of our biggest goals is to be sure that no matter how we approach emergency management, it is done in a respectful way that does not take advantage of the communities and knowledge they hold. Thankfully, most of the literature regarding these topics has advocated for the same.

Developing this product did not feel as if we had uncovered anything earth shattering in terms of knowledge or key gaps in research. It was important for us to remember that information does not have to be surprising to be meaningful. What we have produced is intended to share, learn from and be a quick reference. We hope this info-graphic will prompt further discussions and readings of some of the referenced documents:

Making change through our systems is important but difficult. We decided to conclude this project discussing resilience through storytelling as a path forward. Fires, floods and storms, will continue to happen, especially as the climate crisis progresses. Reinforcing ideas of the resilience communities have led with, empower, and doing so through storytelling will allow for knowledge to be shared in culturally relevant ways. We just need to take the time to listen.

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