

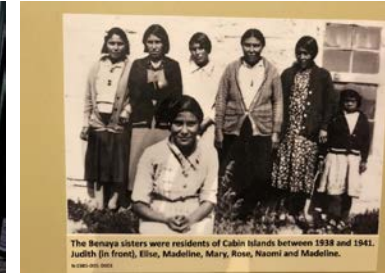
A wooden slice ornament, cut from a tree, hangs from a snow-covered evergreen branch. The ornament is a flat, circular disc with a rough bark edge and a smooth, light-colored wood center. It is suspended by a thin, light-colored string. The background is a soft-focus view of a snowy winter scene with evergreen trees and a blurred building in the distance.

The intersections of Indigenous Languages, Climate Change, and Health

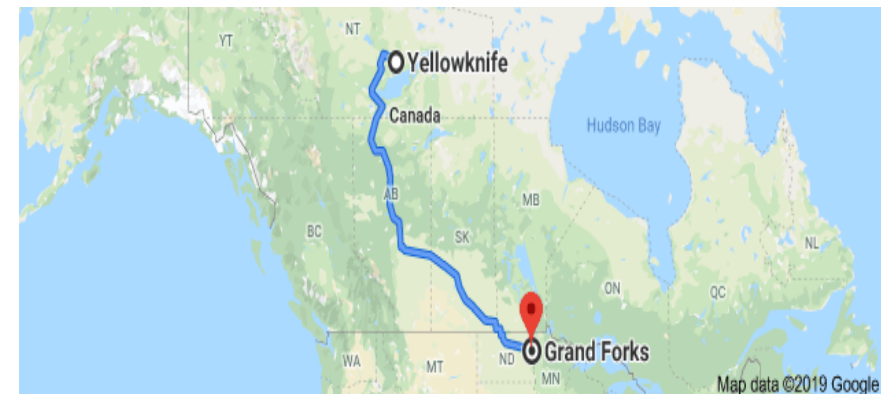
Dr. Nicole Redvers, ND, MPH


Assistant Professor, Department of Indigenous Health
Assistant Professor, Department of Family & Community Medicine
School of Medicine & Health Sciences, University of North Dakota
~Co-Founder/Board Chair-Arctic Indigenous Wellness Foundation

Roots/Relationality



The Benaya sisters were residents of Cabin Islands between 1938 and 1941. Judith (in front), Elise, Madeline, Mary, Rose, Naomi and Madeline.





“The culture’s vitality is literally dependent on individuals, in community with the natural world. Indigenous cultures are an extension of the story of the natural community of a place and evolve according to ecological dynamics and natural relationships” (*Cajete, 2018*)

Stories

A close-up photograph of a campfire at night. Bright orange and yellow flames are rising from a pile of burning logs. The fire is contained within a circle of large, dark, smooth stones. The background is dark and out of focus, showing some green foliage. A large, semi-transparent white circle is overlaid on the right side of the image, containing the word "Relationship" and a horizontal line.

Relationship



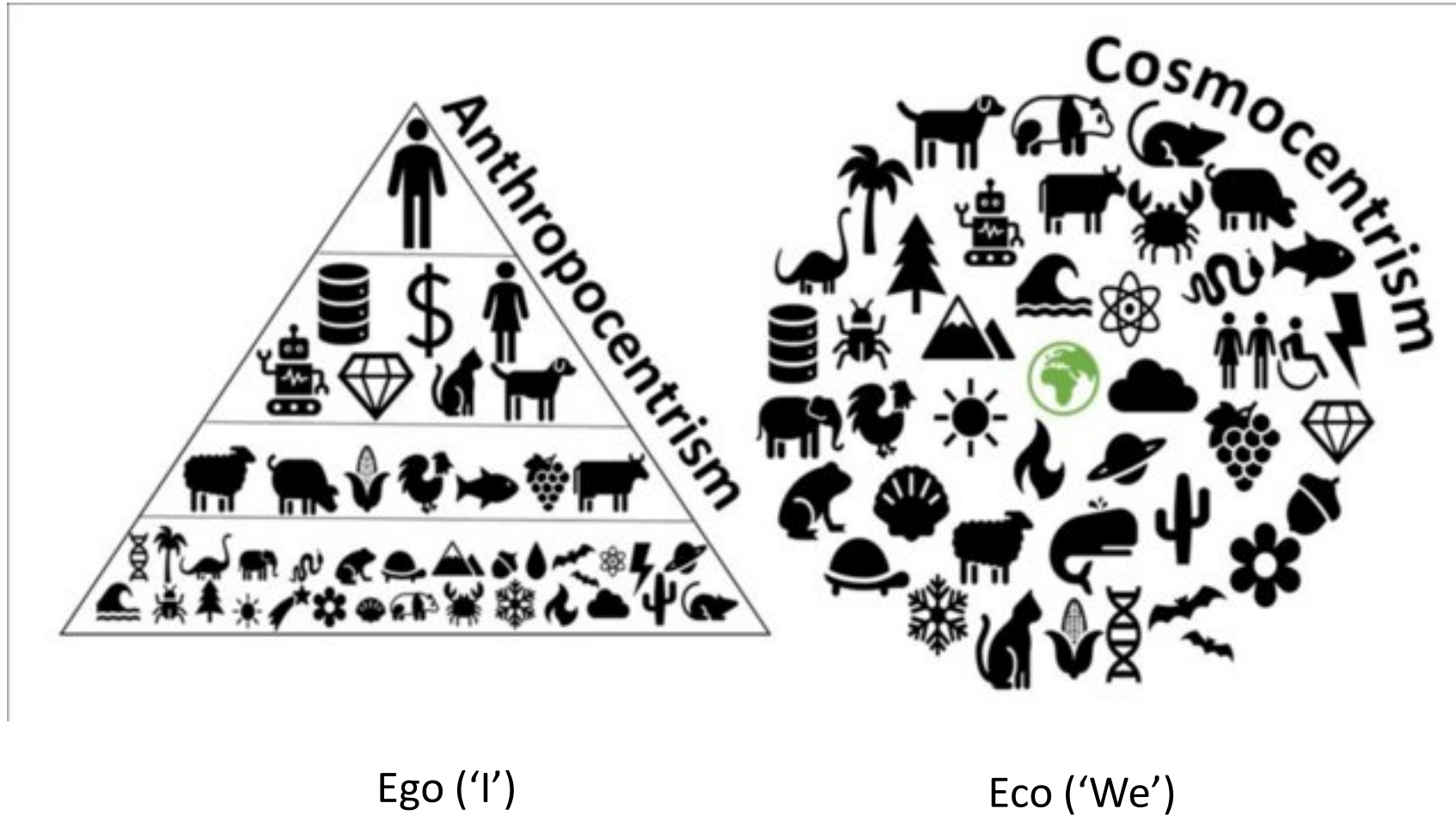


Violence on our Earth | Sketch by: Katie Douglas

Indigenous Peoples- On the Front Lines

We live in parts of the world where its impacts are greatest and depend largely, or exclusively, on the natural environment for our livelihoods, culture and lives.

“Maya...cosmocentric worldview (CWV)—that is, a cosmology of conservation, or merged existence, where people, animals, plants, rivers, stones, clouds, etc., each played a role in maintaining the world.”

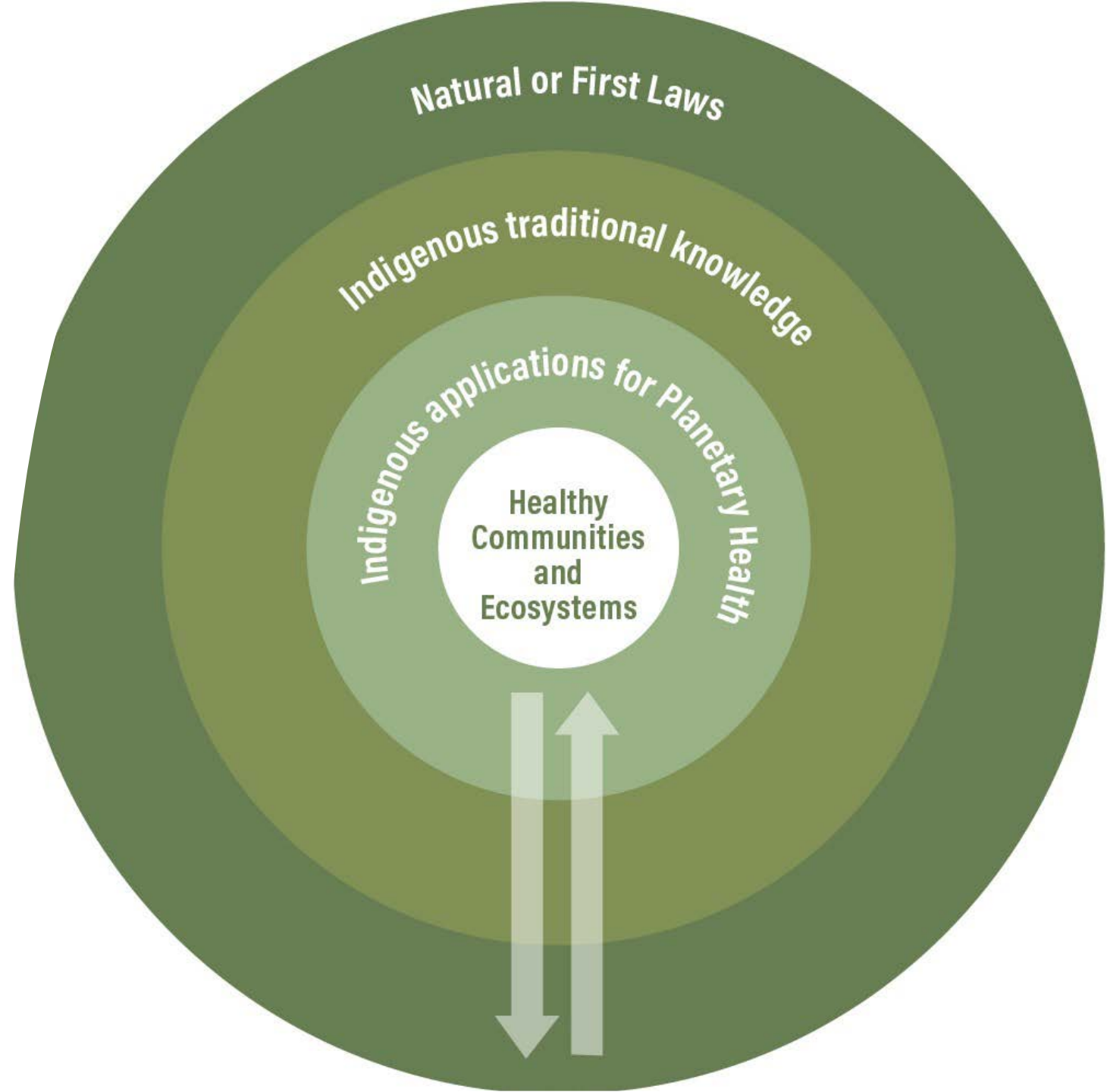


Earth Centered Jurisprudence

-Earth-centered jurisprudence systems govern both nature and global systems (i.e., there is a unity of natural laws between us).

-In the vision for a healthy future, it is important to create the conditions that enable the overcoming of the dissonance between 'being in nature' (i.e., nature that surrounds us) and 'being of nature' (i.e., nature that embodies us).

(Redvers et al, 2020a; Redvers et al, 2020b)





Climate Change

“Working in alliance with nature and her natural laws is the key to ensuring our survival...The reason we have climate change is because we have broken Natural Law. What is Natural Law and how can we find our balance again? ... The spirit in each of our beings carries moral and ethical principles of what should be the basis of our human conduct. We understand these moral principles as natural laws. Natural laws are innate to all living beings. They are the invisible laws that govern all life. All living beings, including Mother Earth herself, are governed by natural laws – whether they know it or not.”

~Elder David Couchere (Nii Gaani Aki Innini) of the Anishinaabe Nation, 2019)



The Determinants of Planetary Health: an Indigenous consensus perspective



Mother Earth level determinants

- Respect of the Feminine
- Ancestral Legal Personhood Designation

Interconnecting determinants

- Human Interconnectedness within Nature
- Self & Community Relationships
- The Modern Scientific Paradigm
- Governance & Law

Indigenous Peoples level determinants

- Indigenous Land Tenure Rights
- Indigenous Languages
- Indigenous Peoples Health
- Indigenous Elders & Children

“Language is the connection
to the living beings.”

~ *Sahtu Dene Elder Be'sha
Blondin*



Indigenous Languages

- As of today, there are 7000 languages spoken in the world.
- **Indigenous Peoples speak nearly 70 per cent of them** (4000 languages), despite being less than six per cent of the world population.
- Almost half of these languages (2680 or 43 per cent) are at risk of extinction, 2000 of them with less than 1000 speakers remaining (IGWIA 2019).
- The situation is so critical that UNESCO estimates that a language is lost every two weeks somewhere around the world.

Indigenous Languages

- Just as language diversity is plummeting, biological diversity is rapidly disappearing.
- Research suggests species are going extinct at up to 1000 times the background rate, with a forecast of as many as 30 to 50 per cent of all species being lost in the next 30 years (Thomas, Cameron & Green, 145–148).
- This means that around a dozen species are lost every day (Chivian & Bernstein 29-74).
- Diversity of ecosystems, people, and languages manifests a remarkable interaction.
- Language is in such a way essential...evidence suggests that the number of languages correlates to an area's biodiversity (Nettle & Romaine, 41-49).

Determinant of Planetary Health

- Indigenous languages are fundamentally connected to the land and the environment from which they are spoken (*Parker, 2012*).
- There has been an established recognition of a direct link between language and traditional knowledge (TK) as it relates to biodiversity (*UNESCO, 2017*).
- Indigenous TK as it relates to the environment is deeply embedded into Indigenous “names, oral traditions and taxonomies,” which can be lost when a community switches to another spoken language (*UNESCO, 2017*).

Determinant of Planetary Health

- With linguistic and biological diversity being functionally connected (*Gorenflo et al., 2012*), a loss of Indigenous speakers and cultural-knowledge keepers has been shown in some regions to have a direct and negative impact on local biodiversity (*Salick et al, 1997*).
- Indigenous knowledges have also been recognized to be an important facet in curbing the loss of Indigenous languages and that of biodiversity (*Wilder et al, 2016*).
- With Indigenous language being a direct facilitator of cultural connection (*Gonzalez et al, 2017*) and overall wellness for Indigenous Peoples (*Whalen et al, 2016*), most often rooted in land-based experiences (*Redvers et al, 2020b; Redvers et al, 2021*), the connection between ecosystem health and Indigenous language and cultural practices has yet to be significantly and respectfully explored.

Determinant of Planetary Health

- Indigenous language preservation has been a consistent priority for Indigenous communities and researchers around the globe; however, **in setting conservation goals, scientists have most often given a higher priority to species likely to go extinct over the extinction of the languages that help protect those very species** (*Perrault et al, 2017*).
- Languages are being lost at rates exceeding the global loss of biodiversity (*Perrault et al., 2017*), and with Indigenous Peoples and their languages being a direct extension of the natural environment, more attention needs to be given to all spans of biodiversity from the micro to the macro.
- Connecting Indigenous language and culture preservation with ecosystem diversity and health allows the opportunity for strengths-based relationships with all entities to be established and furthers discourse on the importance of all the levels of biodiversity that affect our health and the health of our environment.

Determinant of Planetary Health

- The understanding of co-benefits has been clearly elucidated with protection of ecosystems and retention of Indigenous languages going hand-in-hand (*Salick et al, 1997; Gorenflo et al, 2012; Wilder et al, 2016, UNESCO, 2017*).
- With the foundational elements of Indigenous environmental stewardship practices being rooted in Indigenous languages (*Onditi, 2016*), more attention needs to be paid to how ecosystem health fits into the equation from a relational interspecies perspective.
- How Indigenous language and cultural preservation relates to ecosystem health may elucidate the potential for strengths-based inquiry processes that align with Indigenous community priorities around revitalization efforts.

Determinant of Planetary Health

- Nature Needs a New Pronoun: To stop the age of extinction let's start by ditching 'it': Calling the natural world "it" absolves us of moral responsibility and opens the door to exploitation. Here's what we can say instead

"Imagine your grandmother standing at the stove in her apron and someone says, "Look, it is making soup. It has gray hair." We might snicker at such a mistake; at the same time we recoil. In English, we never refer to a person as "it." Such a grammatical error would be a profound act of disrespect. "It" robs a person of selfhood and kinship, reducing a person to a thing.

And yet in English, we speak of our beloved Grandmother Earth in exactly that way: as "it." The language allows no form of respect for the more-than-human beings with whom we share the Earth. In English, a being is either a human or an "it"."

Determinants of Planetary Health

- Nature Needs a New Pronoun: To stop the age of extinction let's start by ditching 'it': Calling the natural world "it" absolves us of moral responsibility and opens the door to exploitation. Here's what we can say instead

“Objectification of the natural world reinforces the notion that our species is somehow more deserving of the gifts of the world than the other 8.7 million species with whom we share the planet. Using “it” absolves us of moral responsibility and opens the door to exploitation. When Sugar Maple is an “it” we give ourselves permission to pick up the saw. “It” means it doesn’t matter.

But in Anishinaabe and many other Indigenous languages, it’s impossible to speak of Sugar Maple as “it.” We use the same words to address all living beings as we do our family. Because they are our family.”

Decade of Indigenous Languages (2022 – 2032)

- The period between 2022 and 2032 has been proclaimed by the United Nations General Assembly as the International Decade of Indigenous Languages, “to draw global attention on the critical situation of many Indigenous languages and to mobilize stakeholders and resources for their preservation, revitalization and promotion.”
- Building on the lessons learnt during the International Year of Indigenous Languages (2019), the Declaration recognizes the importance of Indigenous languages to social cohesion and inclusion, cultural rights, health and justice and highlights their relevance to sustainable development and the preservation of biodiversity as they maintain ancient and traditional knowledge that binds humanity with nature.

Cultural Continuity

- Cultural Continuity might be best described as the degree of social and cultural cohesion within a community (*Reading & Wien, 2009*).
- Cultural continuity also involves traditional intergenerational connectedness, which is maintained through intact families and the engagement of Elders, who pass traditions to subsequent generations (*Reading & Wien, 2009*).

“...anyone whose identity is undermined by radical personal and cultural change is put at special risk of suicide for the reason that they lose those future commitments that are necessary to guarantee appropriate care and concern for their own well-being. It is for just such reasons that adolescents and young adults - who are living through moments of especially dramatic change - constitute such a high-risk group” (*Chandler & Lalonde, 1998*).

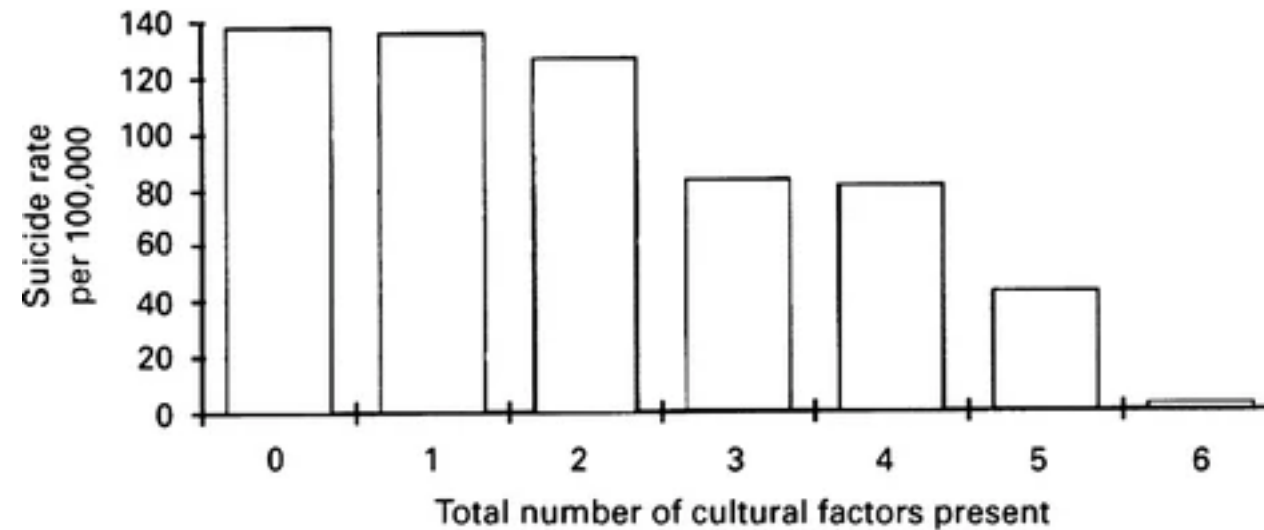
Cultural Continuity as a Hedge against Suicide in Canada's First Nations

- The generalized period of increased risk during adolescence can be made even more acute within communities that lack a concomitant sense of cultural continuity which might otherwise support the efforts of young persons to develop more adequate self-continuity-warranting practices.

“We present data to demonstrate that, while certain Indigenous or First Nations groups do in fact suffer dramatically elevated suicide rates, such rates vary widely across British Columbia's nearly 200 aboriginal groups: some communities show rates 800 times the national average, while in others suicide is essentially unknown.”

“Finally, we demonstrate that these variable incidence rates are strongly associated with the degree to which British Columbia's 196 bands are engaged in community practices that are employed as markers of a collective effort to rehabilitate and vouchsafe the cultural continuity of these groups. **Communities that have taken active steps to preserve and rehabilitate their own cultures are shown to be those in which youth suicide rates are dramatically lower.**”

Cultural Continuity as a Hedge against Suicide in Canada's First Nations



Cultural Continuity as a Hedge against Suicide in Canada's First Nations

“Further analyses of these communities found that **where approximately half of members spoke at least at a conversational level of the Indigenous language, the suicide rate was close to zero.**”

(For Australia, evidence from the Western Australian Aboriginal Child Health Survey also found benefits in the form of lower risks of emotional or behavioral difficulties for children whose carers were more fluent in an Aboriginal language [Zubrick et al., 2005:121]).

Healing through language: Positive Physical Health Effects of Indigenous Language Use

- Language programs in Native American communities hold the promise of improving the mental and physical health of those who participate in them.
- Data exist on the palliative effects of use of a Native language and/or cultural practices on smoking, suicide rates, and alcohol and substance abuse, but many more issues are likely to be evident as more data are collected.
- A return to native spirituality has been shown to improve treatment results, an effect that could be expected to increase with inclusion of the ancestral language.

The Determinants of Planetary Health: an Indigenous consensus perspective



Mother Earth level determinants

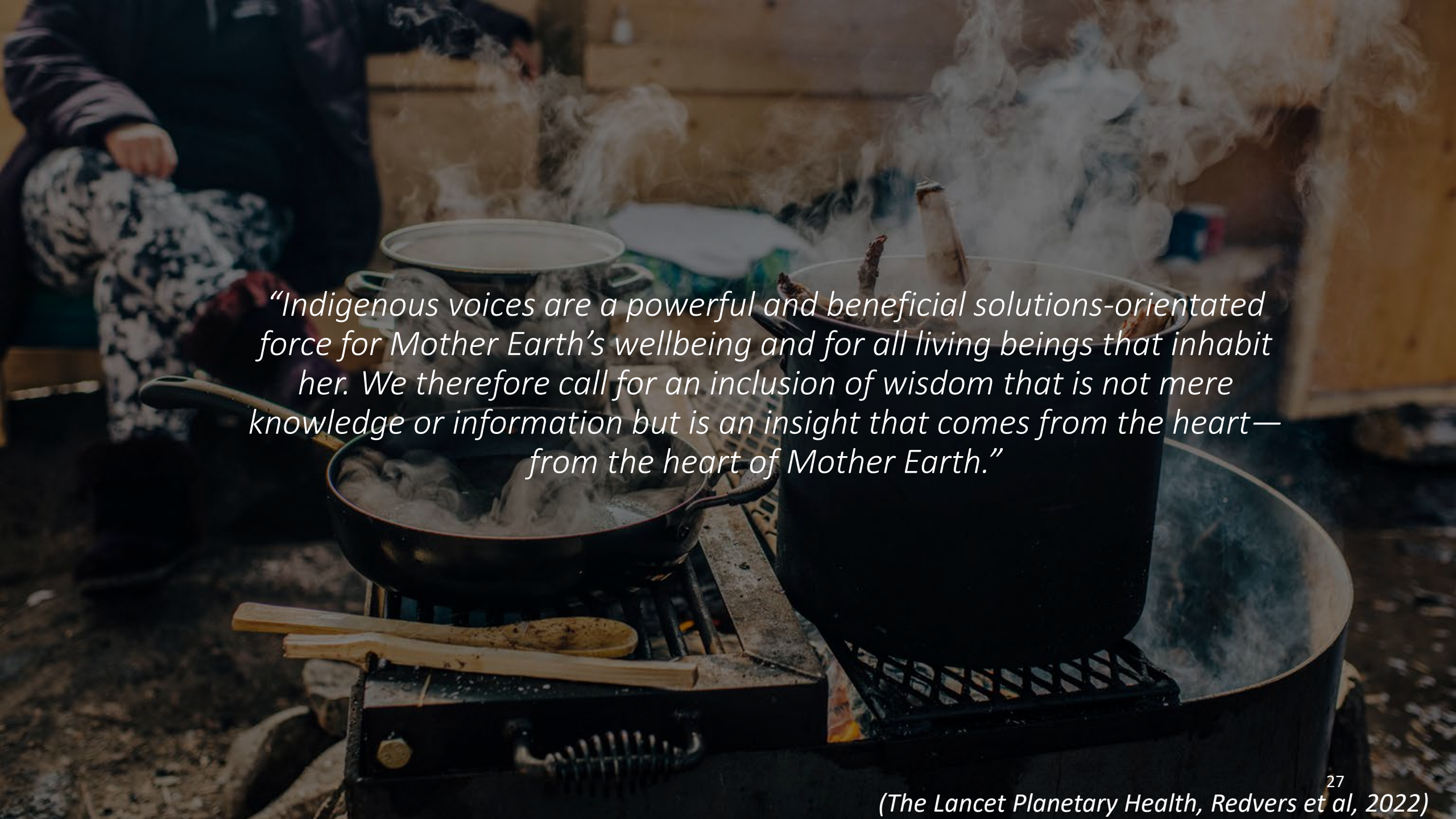
- Respect of the Feminine
- Ancestral Legal Personhood Designation

Interconnecting determinants

- Human Interconnectedness within Nature
- Self & Community Relationships
- The Modern Scientific Paradigm
- Governance & Law

Indigenous Peoples level determinants

- Indigenous Land Tenure Rights
- Indigenous Languages
- Indigenous Peoples Health
- Indigenous Elders & Children

A photograph of a person cooking over an open fire. The person is wearing a dark jacket and a patterned skirt. They are using a large black pot and a smaller black pan on a metal stand over a fire. Steam is rising from the cooking. The background is a wooden structure.

*“Indigenous voices are a powerful and beneficial solutions-orientated force for Mother Earth’s wellbeing and for all living beings that inhabit her. We therefore call for an inclusion of wisdom that is not mere knowledge or information but is an insight that comes from the heart—
from the heart of Mother Earth.”*

“Indigenous languages are medicine
for our people and their
revitalization is vital to our
individual and collective wellness
and the wellness of the earth.”

~ Sara Child





Mahsi cho

Twitter & Facebook: @DrNicoleRedvers

References (in order of presentation):

- Cajete, G. Native science: Natural laws of interdependence. In: Traditional Ecological Knowledge; Nelson, M.K.; Shilling, D., Eds.; Cambridge University Press, Cambridge, UK, 2018; Chapter 2, pp. 15-26.
- Women's Earth Alliance and Native Youth Sexual Health Network. Violence on the Land, Violence on our Bodies. Retrieved October 16th, 2019 from, <http://landbodydefense.org/uploads/files/VLVBReportToolkit2016.pdf>
- Lucero LJ, Cruz JG. 2020. Reconceptualizing Urbanism: Insights from Maya Cosmology. *Frontiers in Sustainable Cities*. 2:1. <https://doi.org/10.3389/frsc.2020.00001>
- Redvers N, Poelina A, Schultz C, Kobei DM, Githaiga C, Perdrisat M, Prince D, Blondin B. Indigenous Natural and First Law in Planetary Health. *Challenges*. 2020a; 11(2):29. <https://doi.org/10.3390/challe11020029>
- Redvers N, Yellow Bird M, Quinn D, Yunkaporta T, Arabena K. Molecular Decolonization: An Indigenous Microcosm Perspective of Planetary Health. *Int J Environ Res Public Health*. 2020b;17(12):4586. Published 2020 Jun 25. doi:10.3390/ijerph17124586
- Redvers N, Celidwen Y, Schultz C, Horn O, Githaiga C, Prince M, Perdrisat M, Plume LM, Kobei D, Cunningham Kain M, Poelina A, Rojas JN, Blondin B. (2022). Outlining the Determinants of Planetary Health: An Indigenous Consensus Process. *The Lancet Planetary Health*. 6(2):E156-E163. [https://doi.org/10.1016/S2542-5196\(21\)00354-5](https://doi.org/10.1016/S2542-5196(21)00354-5).
- Parker AV. (2012). Learning the Language of the Land. University of Victoria. Accessed from: https://dspace.library.uvic.ca/bitstream/handle/1828/4106/Parker_Aliana_MA_2012.pdf?sequence=6&isAllowed=y
- UNESCO. (2017). Endangered languages-Biodiversity and linguistic diversity. Accessed from: [http://www.unesco.org/new/en/culture/themes/endangered-languages/biodiversity-and-linguistic-diversity/#:~:text=Maintaining%20indigenous%20languages%2C%20conserving%20biodiversity&text=There%20is%20a%20fundamental%20linkage,\(TK\)%20related%20to%20biodiversity.&text=This%20environmental%20knowledge%20is%20embedded,community%20shifts%20to%20another%20language](http://www.unesco.org/new/en/culture/themes/endangered-languages/biodiversity-and-linguistic-diversity/#:~:text=Maintaining%20indigenous%20languages%2C%20conserving%20biodiversity&text=There%20is%20a%20fundamental%20linkage,(TK)%20related%20to%20biodiversity.&text=This%20environmental%20knowledge%20is%20embedded,community%20shifts%20to%20another%20language).
- Gorenflo LJ, Romaine S, Mittermeier RA, Walker-Painemilla K. (2012).
- Salick J, Cellinese N, Knapp S. (1997). Indigenous diversity of Cassava: Generation, maintenance, use and loss among the Amuesha, Peruvian upper Amazon. *Econ Bot*. 51(6). <https://doi.org/10.1007/BF02910400>
- Wilder BT, O'Meara C, Monti L, Nabhan GP. (2016). The Importance of Indigenous Knowledge in Curbing the Loss ^[1]SEP of Language and Biodiversity, *BioScience*. 66(6):499–509. <https://doi.org/10.1093/biosci/biw026>.
- Gonzalez MB, Aronson BD, Kellar S, Walls ML, Greenfield BL. (2017). Language as a Facilitator of Cultural Connection. *AbOrig*. 1(2):176-194. doi:10.5325/aboriginal.1.2.0176.
- Whalen et al. 2016. Healing through language: Positive Physical Health Effects of Indigenous Language Use. *CUNY Academic Works*.
- Redvers N, Nadeau M, Prince D. (2021). Urban Land-Based Healing: A Northern Intervention Strategy. *International Journal of Indigenous Health*. 16(2). <https://doi.org/10.32799/ijih.v16i2.33177>
- Perrault N, Farrell MJ, Davies TJ. Tongues on the EDGE: language preservation priorities based on threat and lexical distinctiveness. *R Soc Open Sci*. 2017;4(12):171218. Published 2017 Dec 13. doi:10.1098/rsos.171218
- Onditi TL. (2016). Language Attrition and Loss of Indigenous Knowledge: The Twin Sisters of Environmental Degradation in Kenya. *American Journal of Indigenous Studies*. 1(1). Retrieved from: <http://erepo.usiu.ac.ke/bitstream/handle/11732/2843/Tom%20Onditi.pdf?isAllowed=y&sequence=1>.
- Kimmerer. 2015. Nature Needs a New Pronoun: To Stop the Age of Extinction, Let's Start by Ditching "It". Accessed from: <https://www.yesmagazine.org/issue/together-earth/2015/03/30/alternative-grammar-a-new-language-of-kinship/>
- Reading C, Wien F. (2009). Health inequalities and social determinants of Aboriginal Peoples Health. Prince George, BC: National Collaborating Centre for Aboriginal Health.
- Chandler MJ, Lalonde C. Cultural Continuity as a Hedge against Suicide in Canada's First Nations. *Transcultural Psychiatry*. 1998;35(2):191-219. doi:10.1177/136346159803500202