



An acknowledgement of the following:

- Everything was created with its own Original Instructions
- Everything has Right to exist and carry out those Original Instructions
- Everything that we need is provided for by our Mother, *Iethinistenha Ohontsake*.
- Onkwehonwe the First People, are stewards of the lands and waters, and the great balance, or homeostasis that exists
- We are grateful that our Mother, *Iethinisthenha Ohonstake*, provides for with everything we need, and we acknowledge our plant, animal, and celestial relatives

Disclosures

- College Family Physicians of Canada Indigenous Health Committee
- Society of Obstetricians and Gynecologists of Canada *Indigenous* Women's Health Initiative Committee
- Indigenous Physicians Association of Canada (Board)
- Canadian Association of Physicians for the Environment, (Board)
- Federation of Medical Women of Canada (*Board*)
- No financial disclosures





























Objectives

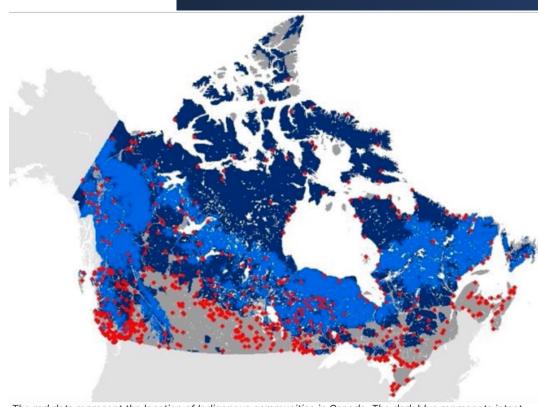
- To briefly describe Indigenous roles in the discourse of biodiversity, healthy environments, and planetary health
- To briefly describe how healthy lands are related to healthy people
- To describe the health of Akwesasne's land and people
- To demonstrate three community engagement projects



Monique Bedard, Oneida, Mo-Thunder.com

BackgroundBiodiversity

- There are nine Planetary Boundaries, including Biodiversity Loss and Species Extinction.
- Goals of conserving 30% of the planet's Biodiversity by 2030.
- 85% of the worlds Biodiversity is under the stewardship of Indigenous people, who are 5% of the population.
- Increasing role for Indigenous people in the realm of Environmental and Planetary Health



The red dots represent the location of Indigenous communities in Canada. The dark blue represents intact ecological areas. The light blue represents Intact Forest Layer. Image: Artelle et al. (2019).

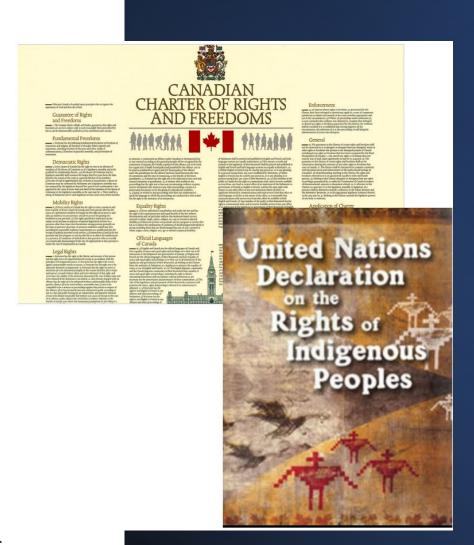
doi:10.1016/j.biocon.2019.108284

BackgroundLaws, Acts, Declarations,Constitutions

Indigenous people are caught between the competing needs of the economy and remaining stewards of Biodiversity.

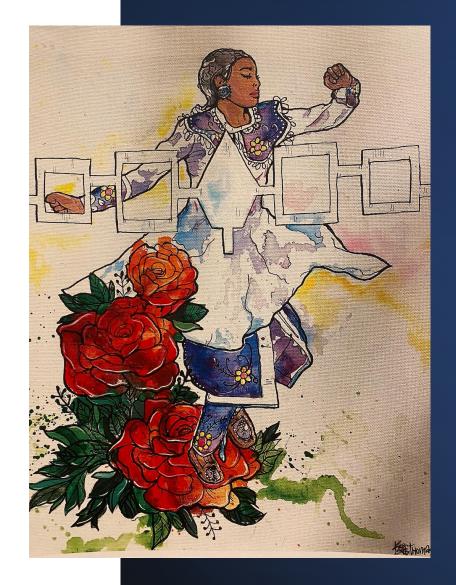
Indigenous people in Canada aim to hold their governments accountable to their own declarations and laws, including the *Constitution* and to the *United Nations Declaration on the Rights of Indigenous People* (UNDRIP)

Indigenous people encounter many political stresses and personal dangers



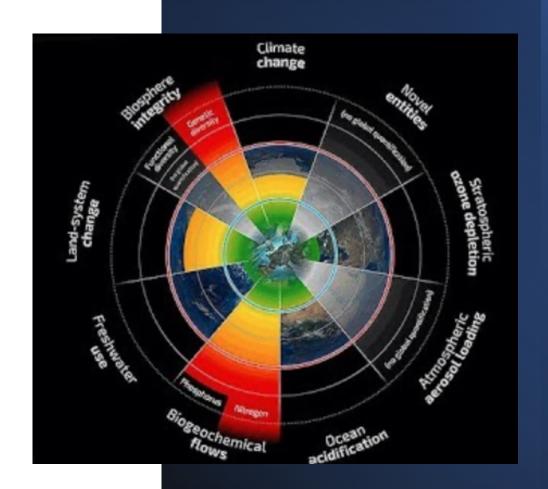
BackgroundHealth

- Health requires having a healthy mind.
- A healthy mind requires a healthy spirit, or personal fire
- Healthy spirits are supported by good relationships with others and with the land, waters, and ice
- Our minds are connected to the land, waters, and ice though our language
- If the lands, waters, and ice are not healthy, then the people are not healthy



BackgroundPlanetary Boundaries

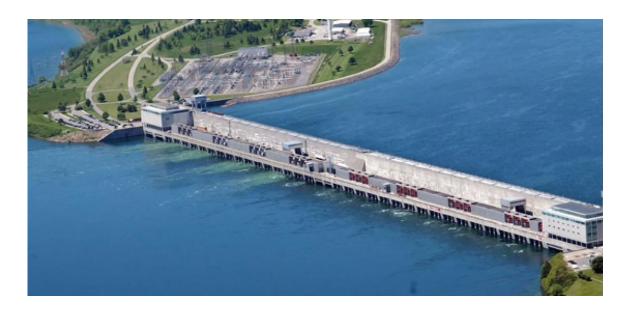
- Canada recently recognized that Canadians have a legal right to a healthy environment
- Having a healthy environment requires the protection of biodiversity
- Biodiversity is one of the nine planetary boundaries.
- Biodiversity stewardship happens at the community level, by people who best know the local environment
- Individuals can place their efforts effectively at the community level

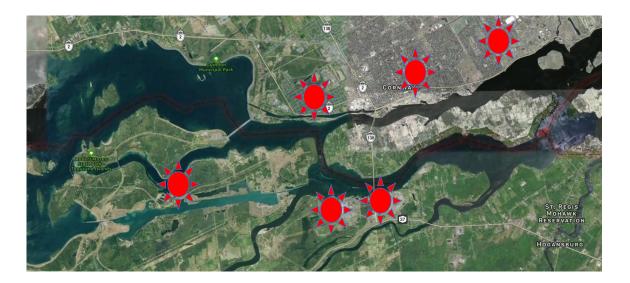


Akwesasne

- 1 of 7 Kanienkehaka (Mohawk) Communities (Akwesasne, Ganienkeh, Kahnawake, Kanehsatake, Ohsweken, Tyendinaga, and Wahta)
- Of the Haudenosaunee (Iroquois) Confederacy
- Community bisected by the Canada-United States International border







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MACLEANS ≡

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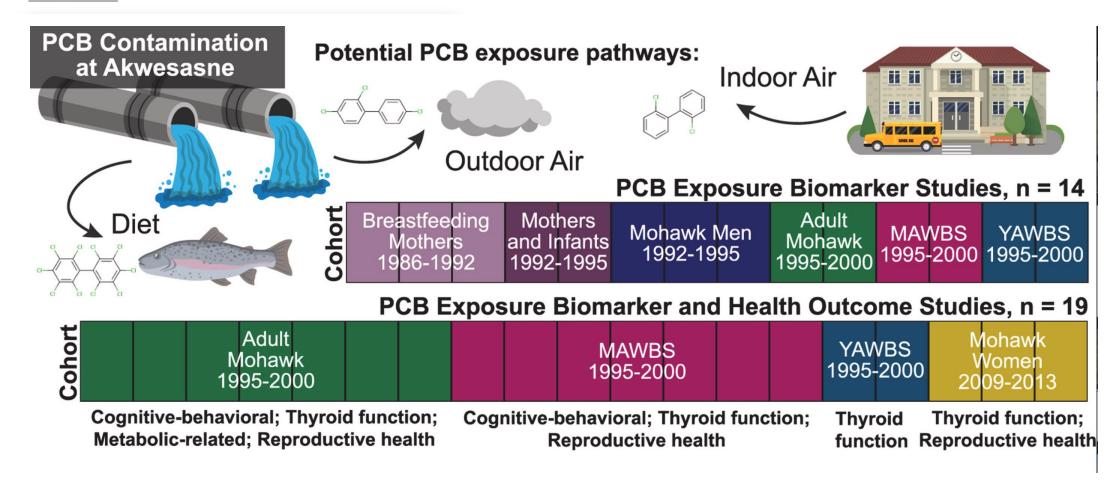
Chemosphere

Volume 306, November 2022, 135454



An evidence map of polychlorinated biphenyl exposure and health outcome studies among residents of the Akwesasne Mohawk Nation

<u>Chelsea A. Weitekamp</u>^a, <u>Rachel M. Shaffer</u>^b, <u>Catheryne Chiang</u>^a, <u>Geniece M. Lehmann</u>^a ∠ ⋈, Krista Christensen b



Summarizing the study's findings

By contaminating our food chain, including mother's milk, with toxic compounds such as PCBs, dioxins, DDT and many others, corporate society has removed from us our very ability to feed ourselves, our families, and our communities...

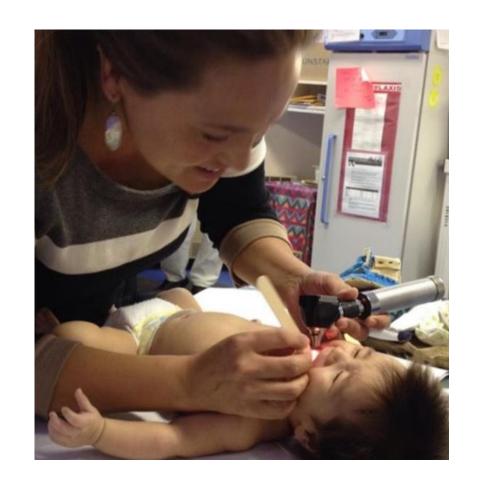
Exposure to toxic contaminants in the environment (air, water, soils, local food, fish, wildlife, and mother's milk) has resulted in a rapidly changing epidemiology among many Native peoples

Katsi Cook Midwife, Akwesasne



Kanonkwatseri:io "Good Medicine Clinic" Akwesasne Kanienkehake (Mohawk) community

- Anecdotally, high prevalence of:
- Diabetes
- Depression, Dementia, Dysthymia
- Autoimmune disease
- Thyroid disease
- Cancers





WHAT MAKES CANADIANS SICK?

50%

YOUR LIFE

INCOME
EARLY CHILDHOOD DEVELOPMENT
DISABILITY
EDUCATION
SOCIAL EXCLUSION
SOCIAL SAFETY NET
GENDER
EMPLOYMENT/WORKING CONDITIONS
RACE
ABORIGINAL STATUS
SAFE AND NUTRITIOUS FOOD
HOUSING/HOMELESSNESS
COMMUNITY BELONGING

25%

YOUR HEALTH CARE

ACCESS TO HEALTH CARE HEALTH CARE SYSTEM WAIT TIMES

15%

YOUR BIOLOGY

BIOLOGY GENETICS

10%

YOUR ENVIRONMENT

AIR QUALITY
CIVIC INFRASTRUCTURE

THE LANCET

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Health in global biodiversity governance: what is next?

Published: January 26, 2023 • DOI: https://doi.org/10.1016/S0140-6736(23)00130-7 •







Biodiversity and environmental stewardship need to be better integrated into local health systems, such as through radical listening methods, ¹⁵ nature prescribing, ¹⁶, ¹⁷ regaining human awareness of interconnectedness within nature, ¹¹ and intergenerational learning practices, ¹⁸ and by directly funding interdisciplinary biodiversity–health work in communities.







Baskets & Beetles

- The Ash borer beetle killing Ash trees used for basket making
- Resurgence of basket making and teaching
- Seed collection, storage, teaching younger people, replant in 30 years
- Beetle can fly 1 km, had been thinking of island refuge... No funds.

"Tsiktsikó:wa" Children, Elders, Language, Tech, and the Shoreline

- In 1985, the health of the water and land was deemed not safe
- Limits to fish consumption, home gardening and farming, and recreational activities such as swimming
- Diminished interactions with the land and water
- In 2022, Carleton University researchers (Dr. K. Horn-Miller, Dr. R. Ingram, and Ryan Ransom) in association with the Native North American Traveling College did a novel project
- Modification of the cultural mentor/apprentice approach, Elders were paired with teens
- Using remote earth observation technology (drones), they looked at areas in the community which were once fishing sites, camping areas, and swimming holes, describing their place names in our language, telling stories about the past





Community Health Board

- Community members who:
 - have returned from colleges and universities
 - have 'borne witness' to history of imposed colonial institutional violence
 - have traditional medicine knowledge
- Have come together to form a community health board, with a core group carrying increased research literacy, working towards meaningful solutions
- Ensuring data sovereignty, meaningful participatory relationship building, and using Indigenous methodologies such as the Kaswentha (Two-Row Wampum) and Indigenous Futurism (the Coming Faces)



Concluding Remarks

- Indigenous peoples have world views that include strong relationships with the land, water, and ice, and all the beings that they support
- These relationships are epitomized by the practice of reciprocity, keeping the great balance.
- Indigenous people have a profound mistrust of those who have the mandate to protect, for instance the government, the police, and in many cases, their own community elected officials
- When Indigenous people hold governments and corporations accountable to agreements and laws, they are often met with resistance or are gas lit



Monique Bedard, Oneida, Mo-Thunder.com

Concluding Remarks

- Indigenous people are being asked for their knowledge to mitigate biodiversity loss
- Engagement will have to be organized with a careful evaluation of responsible representation.
- Community representation will have to explicitly maintain accountability to the land, the community, and future generations.
- Individuals selected by non-grassroots risk losing their community legitimacy
- We all have an interest in securing the future of organized life on the planet. We want to leave our children with opportunities and lives that are fulfilling, wholesome, and based in healthy relationships



Monique Bedard, Oneida Mo-Thunder.com

References

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- Slide 2: Ohenton Kariwatehkwen, Akwesasne TV, 2016
- Slide 3: downloaded logos CAPE, FMWC, IPAC, CFPC, SO)GC
- Slide 4: Katsi Cook, provensustainable.org, personal and family photos
- Slide 5: painting by Monique Bedard, Mo-Thunder.com
- Slide 6: Artelle K. et al., Supporting resurgent Indigenous-led goverance: a nascent mechanism for just and effective conservation. Policy Analysis. Biological Conservation. 240 (2019): 108284
- Slide 7: The Canadian Charter of Rights and Freedoms, The Canadian Press; The United Nations Declaration on the Rights of Indigenous People, kairoscanada.org
- Slide 8: painting done by Kat Thomas, Akwesasne
- Slide 9: Planetary Boundariews: Stockholm Resilience Centre, www.stockholmresilience.org
- Slide 10: Google Maps photoclick

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- Slide 12: Weitekamp et al., An evidence map of PCB exposure and health outcome studies among residents of the Akwesasne Mohawk Nation, Chemosphere, 306 (2022) 135454
- Slide 13: Katsi Cook, Running Strong for American Indian Youth
- Slide 14: personal photo
- Slide 15: What makes Canada sick. Homeless Hub: infographic SDH Canadians: homelesshub.ca
- Slide 16: Health in Global Biodiversity Governance: What's next? Opinion. Willetts et al, The Lancet, Jan 26, 2023.
- Slide 17: personal photo, ash borer beetle: invasivespeciescentre.ca, baskets: Indian Craft Shop
- Slide 18: mohawkatlas.org, drone photo of participating group 2022
- Slide 19: painting by Owisokon Lahache, Kahnawake
- Slide 21 /22: painting by Monique Bedard, Mo-Thunder.com