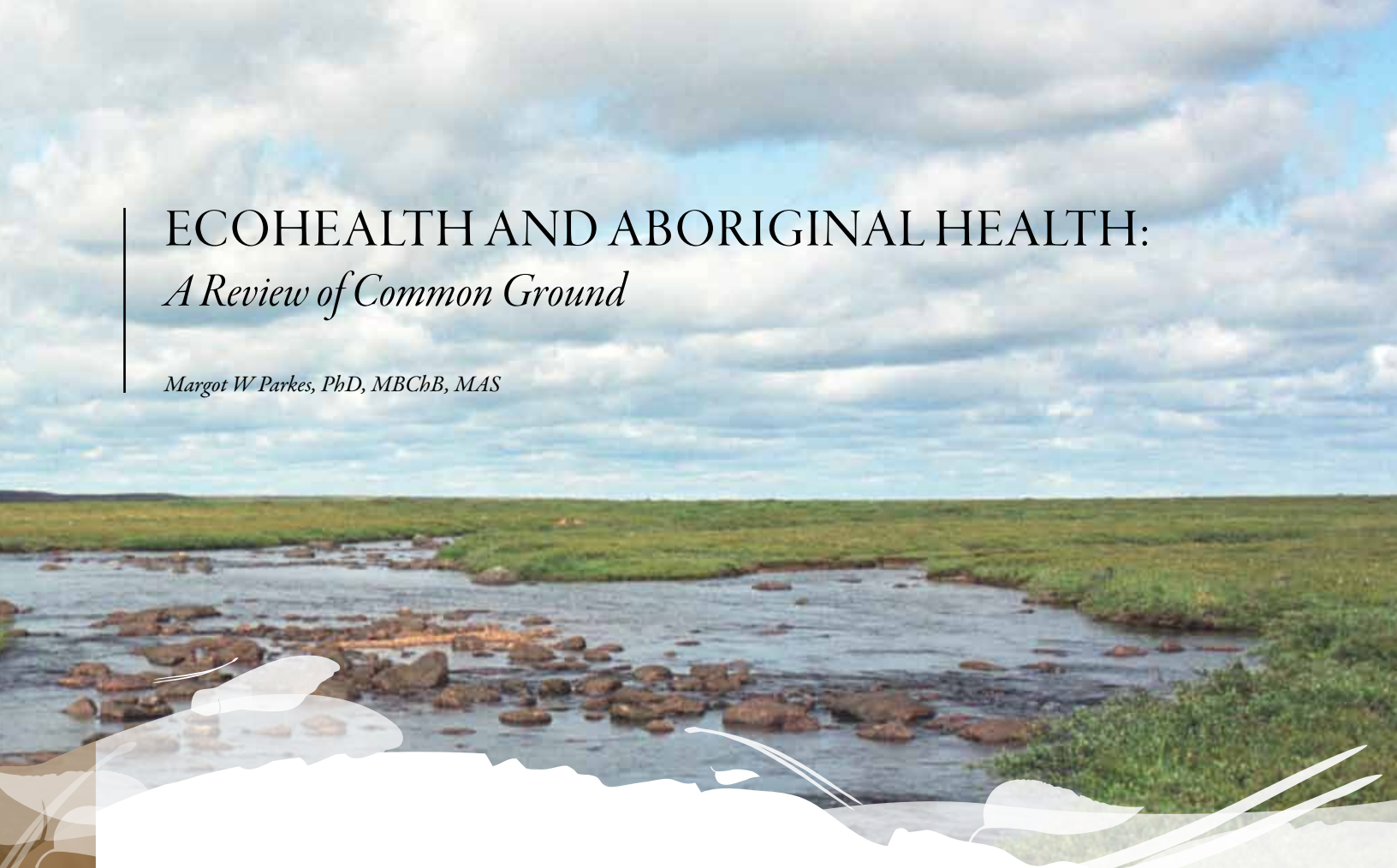




ECOHEALTH AND ABORIGINAL HEALTH: *A Review of Common Ground*

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The health and wellbeing of Aboriginal* communities is closely linked to connection with the land, and from the strength of culture that grows from this connectivity (Greenwood & de Leeuw, 2009). This review commences with this premise, identifying potential common ground between ecohealth and holistic approaches to Aboriginal health and introducing a new generation of research and practice seeking to address longstanding divides between social and environmental views on health. Examples are provided of how such approaches are being applied to improve health and wellbeing in Aboriginal communities in Canada and Indigenous communities internationally.

Revisiting Age-Old Connections Between People, Place and Health

Current research, policy and practice focused on health and wellbeing tend to treat social and environmental concerns separately. On one hand are discussions of the causes and health consequences of social disparities – captured by the phrase “inequities are killing people” and exemplified by attention to the social determinants of health (CSDH, 2008). In this context, the physical environment and ecosystems tend to receive little attention, despite providing a non-negotiable basis for the food, water, livelihoods and

living systems on which we depend (WHO, 1986; McMichael, 1993). Recent analyses of social determinants of health in Canada recognize fourteen important factors determining health, but barely make reference to the physical environment (Mikonnen and Rafael, 2010). On the other hand, an orientation to the physical environment tends to focus on contaminants and hazards in food, water and soil, and the need for protection against harmful exposures. This leads to a view of the natural world as a source of illness rather than a basis for life, and tends to overlook the social processes that drive environmental change and compound health impacts (Parkes, Panelli, & Weinstein, 2003). These tendencies highlight limitations of

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* ‘Aboriginal’ in this review refers to First Nations, Métis and Inuit peoples. First Nations will sometimes be subdivided by residence on/off reserve.



viewing health solely through a biomedical or social lens, and reinforce the imperative for approaches that recognize connections between ecosystems, equity and health, and overcome persistent dichotomies between nature and society in research and policy (Macnaghten & Urry, 1998).

The artificial divides between social and environmental factors influencing health have been unhelpful – and even harmful – for those who view Aboriginal health and wellbeing as an embodiment of inter-relationships that include land, water, culture and identity (Greenwood & de Leeuw, 2009; Parkes, de Leeuw, & Greenwood, 2010). Although a review of determinants of Aboriginal health is beyond the scope of this paper, holistic models and integrated approaches to Aboriginal health have made valuable progress in overcoming these divides already (see, for example RCAP, 1996; Durie, 2003; Richmond, Elliott, Mathews, & Elliott, 2005; Assembly of First Nations, 2007; Panelli & Tipa, 2007; Williams and Mumtaz, 2007; Wakefield, 2008; Greenwood & Place, 2009; Loppie Reading & Wien, 2009, Richmond & Ross, 2009). Some themes of these holistic models are echoed in the development of

fields such as ecohealth, environmental justice, environmental health promotion and human ecology, each of which propose nuanced understandings of health and wellbeing in relation to environmental change and society, though not always oriented toward Aboriginal communities (Follér, 2001; Forget & Lebel, 2001; Schulz & Northbridge, 2004; Higginbotham, Connor, Albrecht, Freeman, & Kingsley, 2006; Albrecht et al., 2007; Stephens, Willis & Walker, 2007; Marten, 2001; Masuda, Zupancic, Poland, & Cole, 2008; Waltner-Toews, 2009).

A common ground is emerging among a number of approaches to health and wellbeing, based on reconnecting people and place, and a recognition of past and present driving forces of social and ecological change as interrelated determinants of health (Parkes et al., 2003). Some view these developments as a re-discovery of the intent of the Ottawa Charter for Health Promotion, with its emphasis on a socio-ecological context for health, and the need for reciprocal maintenance – “to take care of each other, our communities and the natural environments” (WHO, 1986).

A longer historical lens recognizes these integrative approaches as (re)expressions of ancient knowledge – rekindling holistic views of health and wellbeing that have been cultivated by Aboriginal peoples for millennia (Durie, 2003, 2004; Panelli & Tipa 2007; Nettleton, Stephens, et al., 2007; Stephens, Parkes, & Chang, 2007). This is especially notable in the shift from a view of the environment as a ‘natural resource’ (to be exploited, or as a possible source of ‘hazards’) to a view of the ecosystem as life source, and a not-negotiable foundation for all life. Such views also echo vast bodies of indigenous knowledge, currently (re)gaining profile as traditional ecological knowledge, as teachings for sustainable living and management, and as the basis for resurging indigenous identity and leadership (see for example Berkes, Colding, & Folke, 2000; Turner, 2005; Mzinegiizhigo-kwe Bédard, 2008; Tipa and Nelson 2008).

This review profiles the emerging field of ecohealth as a systemic development from traditional concepts of environmental health and health promotion, with potential to complement innovations proposed by holistic models of Aboriginal health. An overview is given of



developments on the international stage, in Canada, and from place-based projects around the world. Resources, websites and projects are provided for those interested in finding out more about this new generation of approaches to Aboriginal health.

Ecohealth: A Platform for Learning and Action Linking Ecosystems, Equity and Health

Ecohealth is part of a growing repertoire of approaches to research, practice and policy that actively connect ecological and social determinants of health. Ecohealth approaches have been described as “participatory, systems-based approaches to understanding and promoting health and wellbeing in the context of social and ecological interactions” (Waltner-Toews, 2009). A brief introduction to the emerging field of ecohealth is presented here, highlighting characteristics that make it relevant for those seeking to link equity and ecosystems in their approaches to Aboriginal and Indigenous health.

Ecohealth is based on the recognition of ecosystems as life-supporting foundations for health and wellbeing, building on

long-standing knowledge of the links between health, community, environment and economy, and the overlaps between health and sustainability (UNCED, 1992; Hancock, 1993; Parkes et al., 2003; Corvalan et al., 2005; McMichael, 2006). An orientation to “ecosystem health” in the 1990s laid important groundwork for this view, especially by building an interface among the social, natural and health sciences (Rapport, Costanza, & McMichael, 1998). Ecohealth has also been influenced by the field of “conservation medicine” (Aguirre, Ostfeld, Tabor, House, & Pearl, 2002), and what is sometimes described as “One Health”, linking human and animal health with increased attention to ecosystem context (Zinsstag, Schelling, Wyss, & Mahamat, 2005). Drawing on disciplines ranging from anthropology, geography and systems ecology, to epidemiology and public health science, the field of ecohealth is part of a broader call for “ecosystem approaches” to health and sustainability (Kay, Regier, Bowle, & Francis, 1999; Waltner-Toews, 2004; Waltner-Toews, Kay, & Lister, 2008).

The evolution of “ecosystem approaches to health” have made an important contribution to the emerging field of

ecohealth (Forget & Lebel, 2001; Lebel, 2003; De Plaen & Kilelu, 2004; Webb et al., 2010). Initially associated with projects funded by Canada’s International Development Research Centre (www.idrc.ca/ecohealth), such approaches have found broad application to address complex health problems – especially in communities facing rapid social and ecological change where concerns regarding health, environment and inequities are intensified (De Plaen and Kilelu, 2004; Bonet, Spiegel, Ibarra, Kouri, Pintre, & Yassi, 2007; Boischio, Sánchez, Orosz, & Charron, 2009).

Ecosystem approaches to health not only reconnect ecosystems with social dynamics, but also demand attention to the principles of transdisciplinarity, participation, equity and sustainability, as well as the challenges of learning and working together across sectoral, disciplinary, gender and cultural boundaries to achieve this (Mertens et al., 2005; Parkes, Spiegel, Breilh, Cabarcas, Huish, & Yassi, 2009). The Canadian Community of Practice in Ecosystem Approaches to Health highlights the importance of Aboriginal perspectives noting that “CoPEH-Canada proceeds from the premise that Indigenous



Communities – and their traditional relationships and perspectives on nature and health – bear particular relevance to our deliberations and actions” (www.copeh-canada.org).

In the last decade, the field of ecohealth has been advanced by the establishment of an international journal (*EcoHealth*) and the International Association for Ecology and Health (Wilcox et al., 2004; Patz, 2007). These developments have provided a platform for those involved with research, policy and practice to “encourage development of transdisciplinary teaching, research and problem-solving that cut across many fields of scholarship (including natural, social and health sciences, and the humanities) and draws upon multiple types of knowledge” (www.ecohealth.net).

In parallel with these developments, the theme of Indigenous Perspectives on Ecosystem Sustainability and Health began to emerge, leading to a special issue of the *EcoHealth* journal that was timed to coincide with the adoption of the United Nations Declaration on the Rights of Indigenous People (Stephens, Parkes, & Chang, 2007; United Nations, 2007).

The resulting papers, with examples from Alaska, Australia, Burma, Cambodia, Canada, Ecuador, Guatemala, Kenya, Laos, Namibia, New Zealand and Peru indicated the beginning of a conversation between the field of ecohealth and understanding of Aboriginal health (Johnston, Jacups, Vickery, & Bowman, 2007; Nettleton, Stephens et al., 2007; Panelli & Tipa, 2007; Wahbe, Jovel, Silva Garcia, Llagcha, & Point, 2007; Wernham, 2007).

Together these developments in ecohealth highlight that ‘ecosystem approaches’ offer far more than a biophysical focus on health and ecosystems. Instead, ecosystem approaches represent a holistic way of understanding a situation, and a focus on complex social-ecological dynamics (Yaffee, 1999; Bunch, McCarthy, & Waltner-Toews, 2008; Waltner-Toews et al., 2008) that also recognizes the interconnections with culture, identity and wellbeing. At its core, ecohealth demands an ecological and systemic view of the environment – recognizing ecosystems and the biosphere as the foundation for all life and environmental values well beyond ‘natural resources.’ This orientation has much to learn from the longstanding precedents of indigenous worldviews,

where recognition of the environment as a life-source demands a holistic view of social and environmental dimensions of health, and also leads to significantly different expectations and approaches to improving health. The development of ecohealth approaches that address health more holistically, and encourage integration and exchange among multiple forms of knowledge, suggest a new terrain of research and practice that can greatly benefit from, and potentially be highly complementary to, holistic approaches to Aboriginal and Indigenous health.

Linkages Among People, Place and Aboriginal Health on the International Stage

Developments on the international stage provide an important backdrop to efforts focused on Aboriginal health in relation to health ecosystems and communities. Of particular importance was the decade of international negotiations leading to the passing of the United Nations Declaration on the Rights of Indigenous Peoples (United Nations, 2007). Among many important statements regarding the right of access to health, traditional medicines,



health services and traditional practices, the UN Declaration states (Article 25):

“Indigenous People have the right to maintain and strengthen their distinctive spiritual and material relationship with the lands, territories, waters and coastal seas and other resources, which they have traditionally owned or otherwise occupied or used, and to uphold their responsibilities to future generations in this regard” (United Nations, 2007).

The UN Declaration on the Rights of Indigenous Peoples was ratified in 2007 with negative votes from only four countries (Australia, Canada, New Zealand and the United States) and has subsequently been endorsed by Australia and New Zealand. The Declaration provides an important backdrop to current and future efforts to integrate social and environmental concerns in relation to health and wellbeing. Two such efforts on the international stage were the Millennium Ecosystem Assessment (Millennium Ecosystem Assessment Board, 2005) and the WHO Commission on Social Determinants of Health (CSDH, 2008). These United Nations processes developed largely in

parallel from each other, but have made important contributions to understanding health in relation to both ecosystems and social equity, with particular relevance to Aboriginal communities.

For those interested in the relationships between ecosystems and Aboriginal health, the Millennium Ecosystems Assessment (MA) is an important point of reference. The MA lays out a systematic approach to understanding how human wellbeing is fundamentally dependent on ecosystems services (categorized as provisioning, cultural, regulating and supporting services). Those interested in Aboriginal health can find a range of detailed assessments of the links between human wellbeing and natural assets in relation to different types of ecosystem – ranging from mountain and polar, forest and woodland, inland water (rivers and wetlands), drylands, cultivated, urban, coastal, island and marine ecosystems (Millennium Ecosystem Assessment Board, 2005). Although the MA makes minimal reference to the social determinants of health, the assessment helps articulate the complex ecological relationships that provide the foundation for human life, societies and health and which are, in turn, affected by human activities.

Although the WHO Commission on Social Determinants of Health adopts only a very minor focus on physical environments (with almost no reference to the ecosystems orientation of the Millennium Ecosystem Assessment which preceded it), the Commission’s landmark report does explicitly acknowledge the important interplay of land, language and culture as determinants of Indigenous health:

“Indigenous People worldwide are in jeopardy of irrevocable loss of land, language, culture, and livelihood, without their consent or control – a permanent loss differing from immigrant populations where language and culture continue to be preserved in a country of origin. Indigenous Peoples are unique culturally, historically, ecologically, geographically, and politically by virtue of their ancestors’ original and long-standing nationhood and their use of and occupancy of the land. Colonization has deterritorialized and has imposed social, political, and economic structures upon Indigenous Peoples without their consultation, consent, or choice” (CSDH, 2008).



This statement draws upon a range of contributions focused on social determinants of Indigenous health that were invited as part of the Commission's deliberations, and which have led to more explicit references to the ways in which land sovereignty, environmental stewardship and (dis)engagement are interwoven with other determinants of health (see for example Assembly of First Nations, 2007; Nettleton, Napolitano, & Stephens, 2007; Richmond & Ross, 2009).

For many working in Aboriginal health, these developments echo the knowledge of Elders and provide more impetus to existing efforts to improve health as part of an ongoing interaction between people and places, communities, culture and nature. For others, this integrated view of nature as a life-support is a return to the teachings of Hippocrates, whose views on health as a product of our relationship with nature are outlined in his famous treatise on "Airs, Waters, and Places" (Hippocrates 400 BCE, in 1983 translation) and provide a valuable reminder of integrated perspectives that provided a foundation of western medicine and science.

From the Ground Up: A New Generation of Place-Based Aboriginal Health Projects

Alongside these developments on the international stage, recognition of the value and potential of Indigenous praxis that explicitly connects health, land and culture in Aboriginal communities has enabled continuation and development of local and national place-based initiatives. The scope and diversity of such projects is indicated by the selected projects profiled in Table 1. This sample is not intended as a comprehensive list, but rather to highlight the innovation and leadership being demonstrated by Aboriginal and Indigenous communities that are enacting and embodying the holistic perspectives outlined above.

A common characteristic is the focus on healthy communities in relation to place-based characteristics and language – for example: healthy land and 'country' in Australia; healthy land and healthy ice in Canada; and explicit use of Maori values, praxis and language to name and define Maori-led projects in New Zealand. Each of these approaches exemplifies the innovation possible when ecosystems

are viewed as 'settings' for health and sustainability (Parkes & Horwitz, 2009), while also navigating the complex terrain at the interface between traditional ecological knowledge, indigenous knowledge, and western scholarship (Henwood & Harris, 2007; Kingsley, Townsend, Phillips, & Aldous, 2009). As well as common ground, the projects in Table 1 highlight variation in primary focus ranging from orientation to child health, particular traditional practices (such as customary fisheries) and training programs, to new tools for assessment and policy influence (such as health impact assessment) and the design of projects to achieve multiple health-related objectives within single locations. Other examples, websites, projects, events and resources are profiled below, extending on the selection in Table 1.

The innovations profiled in Table 1 point to a new generation of work that promotes and protects health and wellbeing in Aboriginal communities with a clear orientation to the positive relationships and connectivity among land, community, culture and health, rather than focusing only on deficits, contaminants and disease. This growing body of work and experience highlights new opportunities, and also

Table 1: Next Generation Projects Profiling Ecosystems, Culture, Community and Aboriginal Health

Country	Key Themes and Types of Projects	References and Resources
Australia	<i>Caring for Country</i> is defined as having knowledge, sense of responsibility and inherent right to be involved in the management of traditional lands.	Kingsley et al., 2009
Australia	<i>Healthy Land – Healthy People</i> . Indigenous participation in interrelated activities with the objective of promoting ecological and human health.	Burgess, Johnston, Bowman, & Whitehead, 2005; Johnston et al., 2007
Canada (Arctic, Inuit)	<i>Healthy Land, Healthy Ice, Healthy Life</i> . Understanding Environment-Health Relationships and Mapping Inuusiqtartarvit “sites for health.”	Nasivvik Centre for Inuit Health and Changing Environments, 2010, www.nasivvik.ulaval.ca
Canada (First Nations, Inuit and Métis)	<i>Changing Climate, Changing Health, Changing Stories</i> : A Capacity Development Approach to Community-Based Participatory Health Adaptation Research in Nunatsiavut, Canada.	My Word: Storytelling a Digital Media Lab, a centre for Northern digital storytelling, www.rigoletlab.ca
Canada (First Nations, Inuit and Métis)	<i>Aboriginal Child Health</i> , drawing on <i>Leaving No Child Behind</i> , Canadian Supplement to UNICEF State of the World’s Children, refers to child health as embedded in a web-of-being with direct relevance to ecosystem and climate change.	Greenwood & Place, 2009; UNICEF Canada, 2009; Parkes et al., 2011.
Ecuador	<i>Salud con enfoque de ecosistema</i> . Masters program in Ecosystem Approaches to Health, with explicit focus on Indigenous perspectives and enrollment, also linked to an Andean PhD program with similar orientation.	Parkes et al., 2009
New Zealand (Aotearoa)	<i>Cultural Health Index (CHI)</i> , developed for Māori to assess and manage waterways, incorporating both cultural and biological dimensions. Facilitates intergenerational communication, engagement and co-management of natural resources, with many links to community health.	Tipa & Tierney, 2003; Tipa & Welch, 2006; Panelli & Tipa, 2007; Tipa & Nelson, 2008
New Zealand (Aotearoa)	<i>Ka Ora Te Whenua, Ka Ora Te Tangata</i> . Research into the Well-being of Land and People in Customary Fisheries.	Pehi, 2008; Jackson, 2008
New Zealand (Aotearoa)	<i>Manawhenua Kaitiakitanga in Action: Restoring the Mauri of Lake Omapere</i> .	Henwood & Henwood, in press
United States	<i>Innovations in Health Impact Assessment, Holistic Environmental decision-making and environmental justice</i> .	Arquette et al., 2002; Wernham, 2007

sheds light on the challenges and barriers in doing this kind of work (Tipa & Welch, 2006; Henwood & Harris, 2007). In response to these challenges, those working in Indigenous and Aboriginal health are finding ways to share experiences and lessons across tribal and geo-political boundaries, often using cultural forms and

protocols to move beyond the silos that have separated environmental and social approaches to health and wellbeing.

Ecohealth and ecosystem approaches to health, with their orientation to transdisciplinarity, participation, equity, and sustainability, offer new space for

conversations and actions that are overdue and timely. Learning and exchange that builds on the strengths of both Indigenous knowledge and ecohealth is fertile ground that could help foster a future for Aboriginal communities where ecosystems, equity, health and culture can flourish.



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Further Reading and Viewing: Web Resources, Events, Projects, Organizations.

Australia

Aboriginal Environmental Health unit, New South Wales Unit, available online at: <http://www.health.nsw.gov.au/publichealth/environment/aboriginal/index.asp>.

Healthy Country, Healthy People: Supporting Indigenous engagement in the sustainable management of Northern Territory land and seas, available online at: <http://www.csiro.au/resources/HealthyCountryHealthyPeopleReport.html>

Environmental Health Practitioners, available online at: <http://www.healthinfonet.ecu.edu.au/health-systems/iehpr>.

National and Torres Strait Islander Environmental Health Conference, available online at: <http://www.natsieh.com.au/> (e.g. Better health in a changing environment, Australia 2009).

Canada

Centre for Aboriginal Health Research Consensus Conference on Small Water Systems Management for the Promotion of Indigenous Health, available online at: www.cahr.uvic.ca.

First Nations Environmental Health Innovation Network, available online at: www.fnehin.ca.

Growing Hope in Northern Manitoba Communities. Short documentaries and online videos of food security and environmental justice projects involving First Nation and northern communities in Manitoba. University of Manitoba, available online at: <http://home.cc.umanitoba.ca/~thomps04/Movie.html>.

Health Canada Information for First Nations about environmental health issues and healthy homes, available online at: www.hc-sc.gc.ca/fniah-spnia/promotion/public-publique/home-maison/index-eng.php#guide.

Integrative Science and two-eyed seeing (indigenous and western world-views), available online at: www.integrativescience.ca.

My Word: Storytelling a Digital Media Lab, a centre for Northern digital storytelling, available online at: www.rigoletlab.ca.

Nasivvik Centre for Inuit Health and Changing Environments 2010, available online at: www.nasivvik.ulaval.ca.

National Aboriginal Health Organization, available online at: www.naho.ca.

New Zealand (Aotearoa)

A Cultural Health Index for Streams and Waterways: Indicators for recognising and expressing Māori values, available online at: <http://www.mfe.govt.nz/publications/water/cultural-health-index-jun03/>.

Manaaki Whenua - Landcare Research: Indigenous Knowledge and Values program. Profiling a range of work on themes such as Maori values and native forest, Indigenous values and GIS, Maori community goals for enhancing ecosystem health and cultural values, waste and health, available online at: www.landcareresearch.co.nz/research/sustainablesoc/social/indigenous_index.asp, www.landcareresearch.co.nz/research/research_details.asp?Research_Content_ID=204.

“Whenua ora, tangata ora - Healthy places, Healthy people” networking events convened by Te Roopu Whariki/Whariki Research Group, Massey University, available online at: www.whariki.ac.nz.

United States of America

Health Impact Assessment Project, including implementation of HIA in Alaska affecting traditional lands), available online at: www.healthimpactproject.org/.

Promoting Environmental Health in Native American Communities, available online at: <http://epa.blhtech.com/webinars/>.

Holistic Risk Assessment and Relevance to Native American Nations, available online at: <http://www.urbanhabitat.org/node/169>.

International

AlterNative: An international Journal of Indigenous Peoples.

Healing our Spirit Worldwide, www.hosw.com, focus on successes, best practices and common issues in health, healing and addictions within Indigenous populations (Hawaii, 2010).

International Association for Ecology & Health Biennial Conference, available online at: www.ecohealth.net (e.g. “Global Ecohealth Challenges; Multiple Perspectives”, London 2010).

International: Utz ‘ Wach ‘il: health and well being among Indigenous Peoples. A publication by Health Poverty Action and the London School of Hygiene and Tropical Medicine, available online at: www.healthunlimited.org/Policy/RightsandMarginalisation/IndigenousCommunitiesHealthandRights.

Pimatiswin Journal, A peer-reviewed journal, published twice each year by Native Counselling Services of Alberta in partnership with CRCAN (Australia), Papa Ola Lokahi (Hawaii), and the International Indigenous Council for Healing Our Spirit Worldwide, available online at: www.pimatiswin.com/online.





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