

Vital Link

The journal of the Canadian Association of Naturopathic Doctors

Feature Articles

- 🔥 **Government Relations**
- 🔥 **NEST: A Canadian Naturopathic Organization for Environmental and Social Responsibility**
- 🔥 **Eco-reciprocity and the Moral Obligation of Naturopathic Medicine**
- 🔥 **Remembering Walter Crinnion**
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- 🔥 **Engaging our Patients in *Real* Change for our Planet**
- 🔥 **Observing Linkages between Biodiversity and Planetary Health**

Planetary Health

Volume 26, Issue 3

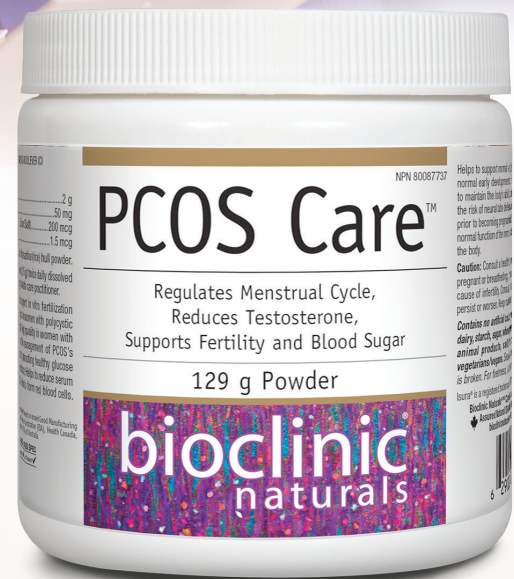


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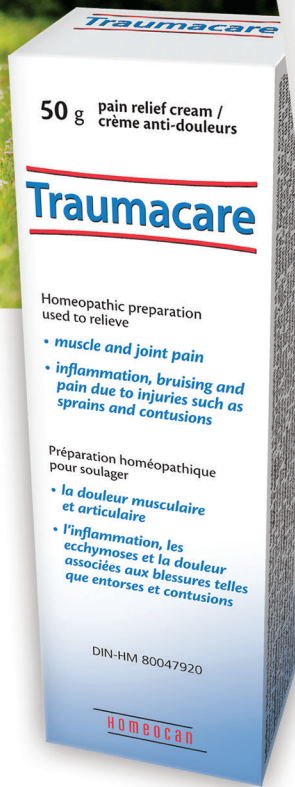
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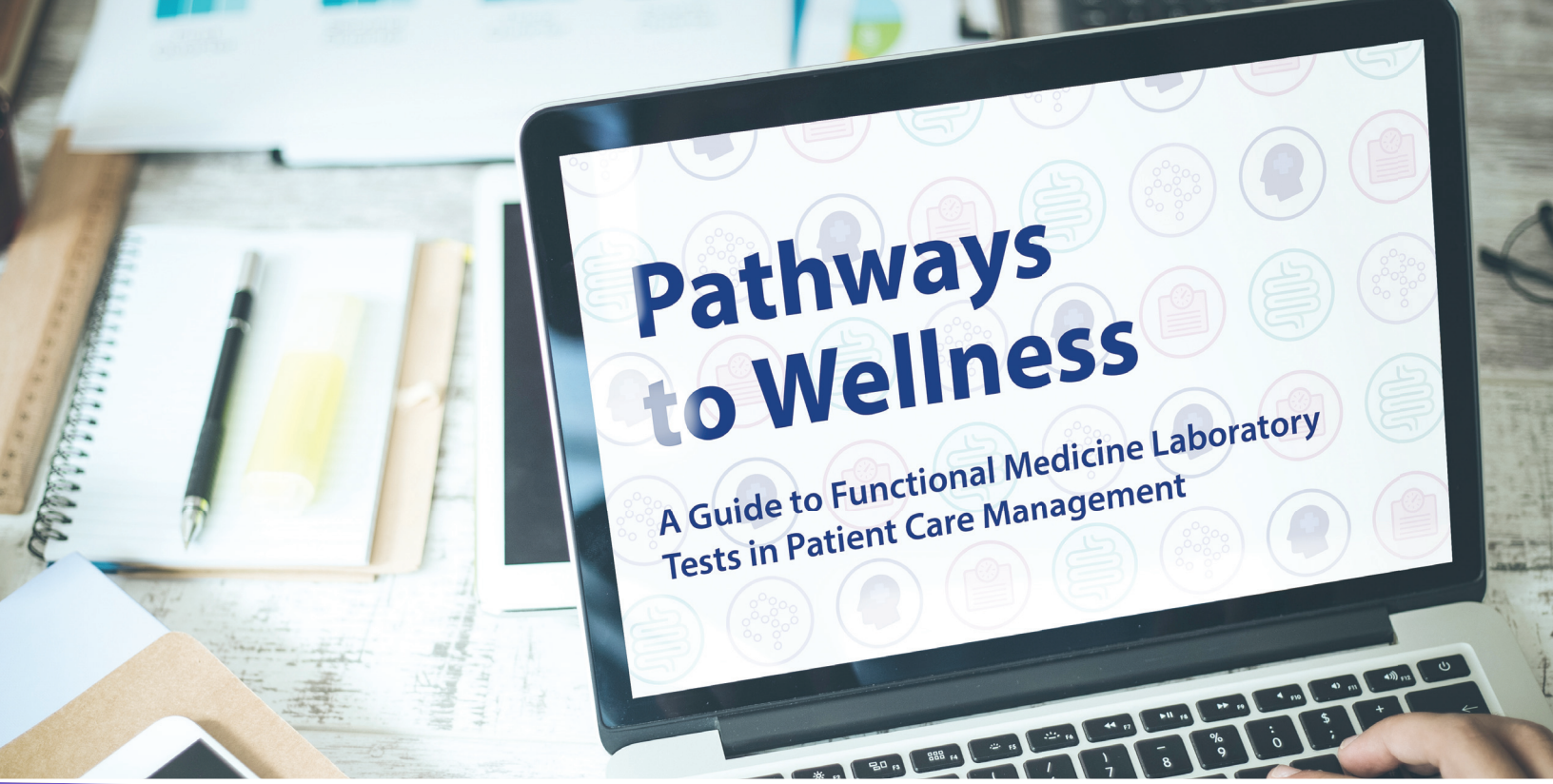
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Vital Link

The journal of the Canadian Association of Naturopathic Doctors

Volume 26, Issue 3

Planetary Health

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The *Vital Link* is the journal of the Canadian Association of Naturopathic Doctors (CAND). It is published primarily for CAND members and features detailed reviews of specific causal factors of health and disease, philosophical and research-based papers, clinical practice articles and case reviews.

Forthcoming Themes

Vol. 26, Issue 4 Addressing Risk Factors for Chronic Disease

Vol. 27, Issue 1 Pediatric and Adolescent Health

Vol. 27, Issue 2 Case Report Competition

Submissions

When writing for the *Vital Link*, contributors should bear in mind their role as ambassadors for the naturopathic profession. Although writing submissions should first and foremost be relevant to naturopathic doctors, contributors are encouraged to consider the journal's wider distribution to other professions. Your contribution to the *Vital Link* will benefit the naturopathic profession as a whole and provide you with personal professional exposure. Previously unpublished material is preferred. Please contact the managing editor for submission guidelines.

Circulation

The *Vital Link* is published three times per year and is distributed to over 2300 qualified Canadian NDs and students of CNME-accredited naturopathic programs in Canada and the U.S. The *Vital Link* is also distributed to the CAND's corporate members and in our media kit. The journal is available in print and e-formats, by paid subscription. Additionally, the *Vital Link* is a tool promoting qualified naturopathic doctors to corporations, insurance companies, and the provincial/territorial, and Federal branches of government in Canada.

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Naturopathic Notes: Planetary Health Edition — A time for action

Dr. Marianne Trevorrow, MA, ND



The concept of planetary health as the health and sustainability of Earth's natural systems is the subject of increased scientific enquiry and interest across many different disciplines. Multiple voices are now proposing that the health and vitality of individuals and their social, political, and natural environments are linked in a fundamental way.

As a former editor in chief of the UK *Lancet* medical journal writes, planetary health should include not only the narrower purview of environmental health but should be considered instead “an inquiry into our total world.”¹

As naturopathic doctors, many of us would certainly think of our own environmental medicine movement (spearheaded by Walter Crinnion, whose life we celebrate in this issue) as part of this interconnected study of planetary health as ecologic and holistic medicine, as well as clinical ecology.² Increasingly, discussion of climate change also plays a role in this consideration, as external ecological systems such as lengthening allergy seasons, novel vector-borne infectious disease, and increasingly severe heat and weather patterns impact the prevalence of many of the conditions that appear in our offices.

The articles in this edition challenge us to get back to the roots of our profession, as a movement to incorporate environment and nature in the health of individuals. The authors encourage us to think about how we translate the emerging science on planetary health into effective clinical communication, and how we can advocate as doctors and citizens, for better environmental policy.

We lead off this time with a guest editorial by Daria Love announcing the formation of a new ND-led organization called Naturopathic Doctors for Environmental and Social Trust (NEST), whose mandate is to harness the capacity of naturopathic doctors to improve environmental and social-justice circumstances in the communities we serve. In a similar vein, our Executive Director Shawn O'Reilly writes about the upcoming Canadian federal election and ND-government relations, urging members to engage with our local political candidates, and to communicate the value of naturopathic care to those who will form the next government.

It is fitting then, in an edition on planetary health, that we have tributes from two prominent naturopathic environmental medicine

colleagues on the life and work of the late Walter Crinnion. Chris Spooner and Lyn Patrick have both written moving accolades to Walter as pioneering researcher and advocate, mentor, co-author, inspiration and friend, as he was to many of us.

Next, we have two authors who will illustrate how to translate the loftier goals of planetary health to actionable naturopathic clinical practice. Leslie Solomonian proposes consideration of an ecological hierarchy of therapeutics and argues passionately for a moral obligation of naturopathic clinicians for climate action. Sonya Nobbie discusses a systems biology approach to clinical communication, making a link between climate and environmental change and effective health promotion strategies. “Humans” she writes, “are more than stewards of our environment – we're manifestations and extensions of it”.

Nicole Redvers then takes a more global approach in her article, arguing that NDs, with our holistic mindset, are primed to help advocate for an Indigenous-led discourse on environmental stewardship. Such discourse, she demonstrates, has been lacking from the scientifically siloed planetary health movement, where Indigenous voices worldwide have been systematically excluded.

Our concluding article, from Vicki Simkovic and Dave Nelson, argues from a biological viewpoint for a link between loss of biodiversity in the natural world and the increasing prevalence of human inflammatory diseases. They also define a thematic link between ecological grief, and the enlarging prevalence of post-traumatic stress and anxiety disorders worldwide.

Finally, and on a more personal note, I would like to give a heartfelt thank-you to David Lescheid, who will be leaving us after 14 years of distinguished service as a reviewer and editorial board member of this journal. As a reviewer, he has demonstrated a seemingly uncanny knack for incorporating objectivity, humility, and helpful constructive criticism to articles as they wound their way through the often-challenging review process. Similarly, on our editorial board, he very often had both insightful and helpful contributions about upcoming editorial themes and issues. If you've written for us at any time over the past 14 years, and have received thought-provoking, incisive guidance delivered in an unbiased way, you just might know David a bit better than you think.

As always, my email inbox is open to letters, feedback and suggestions. 🍂

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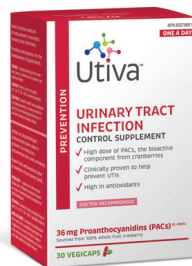
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Government Relations Report

Shawn O'Reilly, CAND Executive Director and Director of Government Relations

By the time you are reading this the election writ will have been dropped and all political parties, their leaders, candidates and volunteers will be in full campaign mode.

Canadians will go to the polls on October 21, 2019 and elect their member of parliament (MP). While the Liberal and Conservative parties are within a point or two of each other in the most recent polls, those in the know are predicting that a minority Liberal government is a likely scenario, with the balance of power held by either the New Democratic Party or the Green Party. The same would be true of the balance of power if it turns out to be a Conservative minority. Speaking of the Green Party, they are experiencing a rise in popularity and running close behind the New Democratic Party. Time will tell who the winners are.

As a not-for-profit organization working at the federal level the CAND must be nonpartisan at all times, not just during an election, to ensure it is able to work with all MPs regardless of which political party they represent or which party forms the government. However, the same restriction does not apply to you as individual NDs.

This election is an excellent opportunity for NDs to engage with their local candidates, educating them on who you are, what you do and the healthcare role NDs play in making a positive impact on patient health. This can be accomplished by joining a local campaign, meeting with all party candidates or simply asking questions of those who come knocking at your door. Candidates want to meet as many constituents as they can in the lead up to voting day and that includes you. While the economy and affordability are the main ballot platform for all parties this election Canadians identified health as second only to climate change as being top of mind. As a profession that has solutions to many of the healthcare issues faced by Canadians, solutions, which have the potential of lowering the cost of our healthcare system, candidates need to hear from you.

Although where you call home often affects how you see the issues, and how you might vote, it is important that you have at least a general understanding of each party's platform. This may help guide your decision of who to vote for in your riding, but more importantly, it will ensure you are able to ask relevant questions of any candidate regardless of their party affiliation. Details of the

election platforms for the main parties can be found on-line. There are also several options if you are interested in keeping up to date on polling data: Canada Poll Tracker at newsinteractives.cbc.ca and 338canada.com are perhaps the most commonly referenced by the politicians and media.

In preparation for the campaign the CAND has worked with its government relations experts, Hill+Knowlton, preparing a list of questions for party leaders. The questionnaire is intended to create awareness and solicit support for the CAND and its membership. It consists of a short list of questions which will create an awareness of NDs, and provide the CAND with insight into the parties' viewpoints. We will share the responses with members as they are received. We will also be publishing one or two thought leadership pieces during the election lead up centered on some of our key issues, such as improving Veterans' health and the ability for NDs to authorize cannabis for medical purposes. Hill+Knowlton has prepared a list of key candidates and ridings to target. The CAND will be reaching out to NDs in those target ridings over the course of the campaign.

To assist our members in engaging with candidates we have developed a 'leave behind' document. Our objective is to create a broader awareness with key messages for local NDs and your patients to use in engaging in discussions with local candidates and campaign teams. Keep in mind that patients are your best advocates! While local campaign workers are discouraged from talking policy at the doorstep, policy discussions are as a matter of course reported back to the local campaign, which filters up to regional campaign teams. In addition to the leave behind document we have created a congratulatory letter that can be sent to successful candidates following the election, both are available for download on the members' only section of the CAND website.

The CAND often hears from members who are interested in engaging with their local politicians. With the forthcoming election on everyone's mind, now is a great time for NDs to get involved with their local candidates, ask the right questions, and find out where politicians stand on issues affecting NDs and the broader healthcare realm. We encourage you to get involved and shape history. Please get out into your community, and by all means get in touch with the CAND with any questions. 🍁

NEST: A Canadian Naturopathic Organization for Environmental and Social Responsibility



Dr. Daria Love, DC, ND, Co-Chair, Naturopathic Doctors for Environmental and Social Trust (NEST)

'The barriers to action on health and climate change are predominantly societal and not technical, with public and political engagement therefore holding the key to accelerating the pace and scale of action.'¹

This edition on planetary health brings voice to the concerns and perspectives of several of our naturopathic visionaries, while mourning the loss of beloved Walter Crinnion. He was the naturopathic profession's leader, an educator and advocate on environmental medicine. His vision and humour will be sorely missed, but he has left an incredible legacy for others to continue the work he began.

The articles in this issue suggest many ways in which naturopathic doctors (NDs) can become part of the global conversation, and create change in the lives of their patients and families to offset the impact of climate change. All this is wonderful, but together as a profession, we need to develop a co-ordinated, collaborative and networked plan in consultation with all our professional stakeholders to facilitate meaningful and lasting global change.

"This is a silent war going on. We are currently on track for a world that could displace billions of people from their homes, taking away even the most basic living conditions from countless people, making areas of the world uninhabitable from some part of the year....."

The fact that this will create huge conflicts and unspoken suffering is far from secret.....

And yet the link between climate and ecological emergency and mass migration, famine, and war is still not clear to many people. This must change."²

Activist and environmental visionary, Greta Thunberg, is warning all citizens of the crisis that climate change is wreaking on the health and well-being of our global communities, and the devastating consequences for our planet. Her voice is not new, but her presence is. She represents our youth and future generations who will inherit the consequences of climate inaction.

Naturopathic Principles emphasize working in synergy with the healing powers of nature. This requires a healthy earth, healthy food available to all, and pro-action on preventable causes of disease. The principle of "Doctor as Teacher" can be interpreted to imply a moral and professional obligation to becoming leaders for climate action and planetary health.

With our Principles in mind, it is time for us to become **naturopathic activists**, and join the growing environmental and social justice activism movement. NDs need to tell the public who we are and where we stand on climate change. They need to know that we share their concerns and fears, that we have the education and skills to facilitate change, and are willing to act, on their behalf, to address the health and social impacts that climate change brings.

Activism:

the use of direct or noticeable action to achieve a result, usually a political or social one.⁴

How can we do this?

Naturopathic Doctors for Environmental and Social Trust (NEST) is a new organization, created by NDs, for NDs, and is dedicated to being the public voice of naturopathic advocacy for social and environmental responsibility. Our mission will include bringing awareness of the unique health and wellness perspective of naturopathic medicine to community and social justice organizations, and building partnerships with those whose values and vision align with our own. We seek to define the role of naturopathic doctors as advocates for planetary health, and inform the members of our profession, our communities, and other health professions of our capacity and goals. Additionally, NEST will bring our advocacy efforts into the political and legislative realms.

NEST has begun as an Ontario-based organization, with consultation and support from the Ontario Association of Naturopathic Doctors (OAND). Our initial plan is to endorse and collaborate on projects with organizations that are addressing the needs of vulnerable communities most affected by climate degradation. NEST's plan also involves bringing naturopathic medicine to individuals who otherwise would not be able to access or afford ND services, including children, the elderly, single parent families, those racialized, Indigenous and LGBTQ, new immigrants and refugees.

Naturopathic Activism:

naturopathic doctors bringing action through co-ordinated, networked plans to address planetary health and climate change, and the environmental and social justice issues that affect the health and wellness of all living beings.

Our first initiative, a collaborative project with a Toronto-based food-justice organization is in the planning stage. Our intention is to involve naturopathic doctors in community-based food security and environmental awareness projects, and support communication and ND-participation throughout Ontario (we hope eventually to have national and international involvement). We have been discussing having naturopathic educational information included in the partner organization's healthy food box program, and on-site food and health information in their mobile food markets that target 'food desert', low income communities.

NEST's nine-member founding board met for its first meeting on August 9. We are now finalizing our vision and mission statements, developing our plans to move forward with our current project, and determining goals and directions for new projects and organizational endorsements. We are planning an outreach for NEST membership within Ontario, seeking participation from NDs in all our communities, especially those of northern, Indigenous and vulnerable communities where those at the greatest health risk to environmental toxicity, food insecurity and social stress reside. We will bring the knowledge and skills learned from these projects to promote and support similar projects in other provinces.

As the founding member of NEST, and a naturopathic elder, it is my belief our profession needs to position itself as a leading health profession striving for environmental stewardship and advocacy, disease prevention and planetary health. Our naturopathic elders and Indigenous teachers have provided us with much knowledge and wisdom for planetary healing and sustainability. Naturopathic doctors have the professional skills and expertise to address the root issues before us and bring our voice to action as those from other health professions have been doing. Are naturopathic doctors willing to accept this responsibility?

Naturopathic doctors must let our profession's representatives and educational institutions know that a naturopathic plan for climate change action is needed. We must promote dialogue and development of strategies to address environmental health and social injustice issues affecting those who are most vulnerable. Our profession's organizations, such as the CAND, provincial associations, Canadian Naturopathic Co-Ordinating Council (CNCC), World Naturopathic Federation (WNF), Canadian College of Naturopathic Medicine (CCNM), and the Boucher Institute of Naturopathic Medicine (BINM), all have a role in helping NDs define our focus, and how we can be most effective. These organizations can also support our efforts to communicate and participate with the public and community organizations already dedicated to working towards climate solutions.

NEST is dedicated to being the voice of the naturopathic profession in terms of protecting and promoting the health of individuals, communities and the environment through sustainable and socially conscious strategies. What is different about NEST is that we are not bound by politics; it is the organization's mission to act independently, while collaborating with our professional organizations and learning institutions.

The UN Human Rights Committee recently created the term "climate apartheid"³, linking poverty, poor health and climate change. Such a term implies a strong sense of urgency to addressing climate change and its resulting negative effects on the most vulnerable of human beings. With our knowledge, and guided by our Principles, naturopathic doctors have a unique opportunity to address the urgency of the climate crisis. There really is no time to wait. The naturopathic profession must take action now!

*"We stand now where two roads diverge.....the other fork of the road, the one less travelled, offers our last, our only chance to reach a destination that assures the preservation of the earth."*⁵

NEST is not an isolated initiative; a small but growing list of initiatives currently led by naturopathic doctors in Canada includes:

- Co-Chair for NEST, Dr. Leslie Solomonian, is co-ordinating the relaunch of the Eco Council, engaging CCNM's students, faculty and administration on climate change discussions and actions, and bringing collaboration with NEST. Plans are underway for a joint event in September. Dr. Solomonian has also brought a call-out to the profession and CCNM for endorsement and participation in the September 27 global climate strike action of Fridays for the Future, the youth action catalyzed by Greta Thunberg.
- The WNF appointed a working group in early 2019, of which I was a member, to produce an educational poster on environmental toxins, and has since formed an Environmental Health Committee. This committee, with representation from at least four world regions, will provide research-based information to the international community of healthcare providers as well as the public about the impact of environmental toxins on health and disease risk. The committee's first meeting was in August, with a two-year plan for completion.
- John Wellner (CEO) and Anna-Liza Badaloo (Manager, Clinical Development) of the OAND have continued to provide advice and strategy supporting NEST's current and ongoing initiatives, with Anna-Liza being an active member of NEST's Board. The OAND has given endorsement of NEST, providing an introduction to NEST at 2018 Convention, NEST announcements in the OAND e-Connect, and info sheets for the delegates at the 2019 AGM and upcoming Convention. There is ongoing dialogue for NEST participation in other OAND events and presentations, as well as organizational and administrative support.

Our national and provincial associations are well positioned to play a vital role in providing similar support and developing policies, mission statements and strategic plans that will inform and educate our stakeholders. For example, communicating to:

- the naturopathic profession about NDs' stance and professional role in climate action;
- other health professions about NDs' goals and intentions to address the public health impacts of environmental toxicity, habitat change, and food security issues caused by climate change;
- the public, letting them know that NDs will act to support their endeavors for planetary action and focus our professional knowledge and skills for their health and well-being; and
- government, making it known that NDs prioritize accountability, and the responsible management and governance of resources for a healthy and sustainable environment.

Let us bring forth the message that prevention is the best medicine, and focus our intentions and actions on issues of poverty, and proactive and preventive health measures. As a meaningful starting point, NEST's focus will be on addressing issues of food insecurity and food waste, and communicating the message that good food is good health. NEST's first public action will be bringing our endorsement and participation in the Global Strike Action.

We encourage every naturopathic doctor reading this to contact NEST and put your passion to good use. It is our belief that working together we can create and bring a naturopathic plan of action for environmental and social change to our local, national and international communities. Please join us – the time is now. 🍁

Contact NEST: NESTNDs@gmail.com

About the Author

Dr. Daria Love, DC, ND has been in professional practice in Toronto for 42 years. As a naturopathic elder, Dr. Love is dedicated to bringing naturopathic engagement to social and environmental justice issues and their effects on global health and the vulnerable within our communities. Her articles, "Impact Donations and Investments: Addressing Environmental and Social Need", and "Naturopathic Activism for Social Justice", have been published by the OAND in 2017 in the Pulse. She is currently Co-Chair of Naturopathic Doctors for Environmental and Social Trust (NEST) with a vision towards promoting the strong role of naturopathic doctors in support of health justice.

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4. Cambridge English Dictionary <https://dictionary.cambridge.org/dictionary/english/activism>
5. Rachel Carson, Chapter 17, Silent Spring, 1962.





Eco-reciprocity and the Moral Obligation of Naturopathic Medicine

Dr. Leslie Solomonian, ND

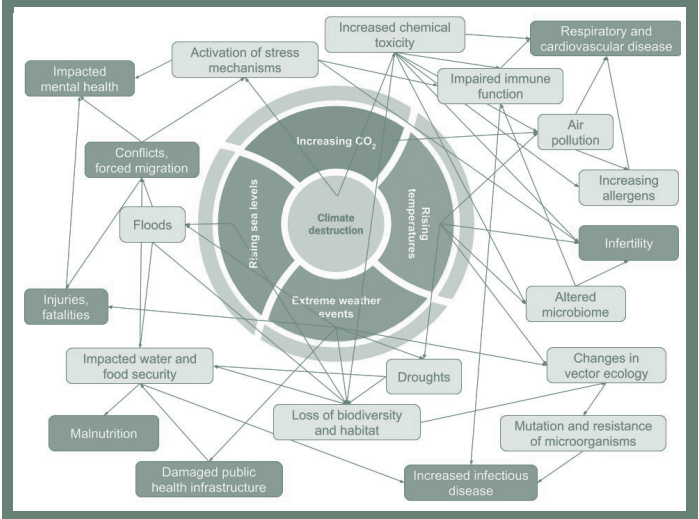
Human health is inextricably and reciprocally linked to environmental health. We are fundamentally part of nature, and it is impossible to be healthy in an unhealthy environment.¹ Environmental toxicity and climate change created by human actions cause catastrophic and potentially irreparable damage to the health of species and ecosystems.² North American naturopathic doctors promise to “preserve the health of our planet for ourselves and future generations.”³ Deliberate action must be taken by the naturopathic community to increase stewardship of the natural world.

The anthropogenic degradation of the natural world has a multitude of detrimental effects on human health,^{5,6} a reality that has been known for decades but pitifully acted on.⁷ It is broadly agreed that global warming does and will continue to cause a rise in both noncommunicable, and vector-borne infectious diseases (such as Lyme); increased famines, fires and floods; increased migration, violence and social destructuring; worsening prevalence of infertility; and rising rates of mental health concerns. The costs of these impacts are personal, societal and economic.⁸ The mechanisms are complex and interconnected, both proximal and distal⁹ (Figure 1).

Modern naturopathic medical practice has roots in nature cure, and traditional and Indigenous healing practices that are grounded in a reciprocal relationship with the natural world. We rely on the healing power of nature in the form of water, air, food and plants; we know that time in nature promotes health;¹⁰ we recognize obstacles to cure that are often inherent to a built and manufactured world,¹¹ such as the impact of urban design on levels of physical activity.¹² If we are to promote health and treat the causes of disease, we must look beyond the individual to consider the environment in which they live.

“But man is a part of nature and his war against nature is inevitably a war against himself.” Rachel Carson⁴

FIGURE 1: Mechanisms and effects of anthropogenic climate change on human health (from the author)



The full effects of the environment on health, however, are complex (see figure 1). Worldwide, the causes of disease are more and more prevalently being linked to a modern, Western lifestyle, environmental toxicity and climate destruction. If individuals do not have access to healthy food, clean water, clean air and a safe home due to climate degradation, it will become impossible to optimize health, and much more difficult to prevent or treat disease.^{5,6,8}

Vulnerable and marginalized populations are the first and most significantly affected by environmental impacts.^{5,13} Communities that lack the resources to rebuild in the wake of extreme weather events (such as Hurricane Katrina in Louisiana¹⁴), are less resilient in the face of climate change. Individuals who are already experiencing food insecurity and inadequate housing are more likely to suffer from respiratory conditions exacerbated by extreme heat and air pollution.¹⁵ If we are to truly seek to promote healthy, equitable communities, we must foster more inclusive practices and engagement in social and environmental advocacy.

Actively caring for our environment will ensure sustainability for future generations around the globe. Slowing and possibly reversing the impacts of climate degradation will require a ‘whole systems’, transdisciplinary approach that takes into consideration (non-exhaustively and in no particular order)^{7,16-18}: Indigenous self-determination, gender equity, electoral reform, shifting economic models, and revolutionized design for urban development, transportation and education.

“It is a curious situation that the sea, from which life first arose should now be threatened by the activities of one form of that life. But the sea, though changed in a sinister way, will continue to exist; the threat is rather to life itself.”
Rachel Carson¹⁹

The Earth herself is subject to the *Vis medicatrix naturae*; she will adapt and modify (see <http://www.gaiatheory.org/overview> for more on the theory that the Earth is a living system). However, if we are willfully ignorant of the impact of our choices on the environment, we are causing harm, both to the environment directly, and ultimately to ourselves and our patients. Escalating climate degradation will cause a collapse of the entire web of existence.²⁰ Although an abundance of data about the loss of habitat and biodiversity has not appeared to substantially prompt coordinated efforts to reverse climate degradation, let us remember that humans are just as enmeshed in that web of existence as all other species, and equally at risk.²⁰ Anthropocentrizing the issue may be the necessary impetus to motivate action.²¹

Beyond our particular consideration of nature in our healing paradigm, an argument can be made that all healthcare providers are morally responsible to advocate for climate action (Figure 2).²²

FIGURE 2: An argument for the moral obligation of naturopathic doctors to advocate for climate action. (from the author with acknowledgement of citation 22)

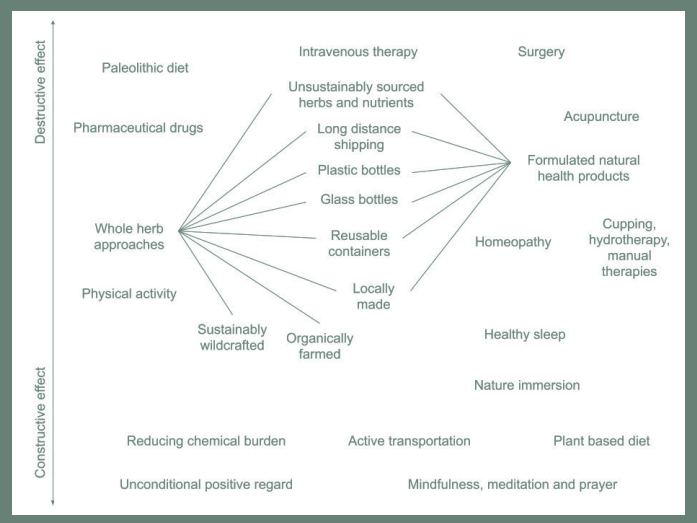
01	Expertise	• Naturopathic doctors are experienced and knowledgeable about the management of climate-change-related health conditions.
02	Proximal	• NDs work directly with individuals who are impacted by climate change
03	Effective	• NDs are effective communicators and advocates, especially when evidence-informed
04	Cost/Risk	• There is minimal personal cost or risk associated with engaging in advocacy; in fact, public engagement may directly benefit practitioners and their communities
05	Unique	• Naturopathic doctors uniquely value the reciprocal relationship between the environment and human health
06	Severity	• The impact of climate degradation is such that all healthcare providers should be alarmed, especially given the commitment to do no harm.
07	Public Trust	• Silence equates to complicity, eroding public trust in the profession. Conversely, active engagement may elevate public awareness and trust.

Naturopathic doctors can consider a number of actions:

1. Make explicit connections with patients between their health goals and the environment. This may require speaking directly to an individual’s personal motivations. Examples might include promoting active transportation and a plant-based diet as part of a strategy to achieve optimal body composition and manage metabolic disease. Couples seeking to improve fertility, or families wanting to address ADHD or autism will be eager to reduce environmental toxins. Encouraging individuals affected by depression or anxiety related to the news cycle might benefit from taking purposeful, positive action on climate change. These steps, no matter how small, can foster empowerment and active hope.

2. Consider the environmental impact of health care practice,²³ and overlap an environmental hierarchy of therapeutics with therapeutic decision-making Like all shared-decision-making, this requires integration with evidence-informed practice, a knowledge of the safety and effectiveness of various treatment options, and ultimately informed consent by patient. This may prompt some practitioners to opt out of offering certain approaches for environmental reasons, perhaps being ethically obliged to refer to someone who will, such as intravenous therapy or acupuncture. Destructive environmental impacts may be a result of sourcing (is the herb sustainably farmed or wildcrafted?), production (how heavily processed is the product), transportation (is the product locally made?), or resultant waste (is the packaging or product reusable or recyclable?) of the therapeutic intervention. Some interventions may in fact have a net constructive effect on the environment, such as eating a plant-based diet, nature immersion (which may promote environmental stewardship in addition to improving personal health), or actively aiming to reduce toxic load.

FIGURE 3: A proposed environmental hierarchy of therapeutics. (from the author)



3. Centre nature in your practice. Consider seeing your patients in an outdoor setting, being mindful of confidentiality concerns (please see the article by Dr. Denis Marier, ND²⁴). Providing “nature prescriptions” and education on nature immersion benefits individual health²⁵ and can promote a spirit of stewardship.²⁶

4. Reflect on personal and professional habits to minimize our own environmental footprint. There are a multitude of ways this can be done, and can be communicated to patients as a statement of commitment as an educational and role modelling strategy. It is the responsibility of the individual to reflect on the degree to which these actions will have a significant effect, and to balance this with their own personal capacity. Examples to explore include:

- a. Choosing to bank at a credit union which does not invest in fossil fuels, and to invest personal assets in an environmentally responsible way (e.g. SolarShare Co-op)
 - b. Utilizing a renewable energy service to power clinic and home activities
 - c. Avoiding the excessive use of air conditioning and heating
 - d. Using active or public transportation to reach work (and choosing clinic space that is reachable by these methods)
 - e. Reducing plastics and using reusable supplies as much as possible (towels, sheets, gowns)
 - f. Attend conferences locally or virtually to avoid emissions from car or air travel
5. **Be an agent of change and make it public.** To engage in promoting public health requires activism on the part of individuals and groups. The Canadian Association of Naturopathic Doctors (CAND) and other professional associations (such as the newly created Naturopathic Doctors for Environmental and Social Trust (NEST)) can take part in lobby actions to push for climate action. You or your business can support and collaborate with organizations that are advocating for change.

Some have proposed that we add *scientia critica* to our principles.²⁷ The best available evidence tells us that the environmental situation is dire,²⁸ and the knowledge and technology exists to slow the tide. Naturopathic doctors are educators and leaders, and logically positioned to highlight the links between climate destruction and health to our patients and to the community. For this purpose (and perhaps for others), let's consider adding the principle of *vocare* - to advocate. Let us advocate for climate action, in our personal lives, in our work with patients, and our engagement in our communities. Let us look to Indigenous wisdom for guidance to foster a reciprocal relationship with the environment and to walk gently on the Earth in order to preserve and protect the land, air and water for seven generations and beyond. 🌱

About the Author

Leslie Solomonian is a naturopathic doctor and associate professor at the Canadian College of Naturopathic Medicine. While she was raised to engage in environmental stewardship in her personal life, she despairs that individual actions will be insufficient to avoid climate breakdown. She is actively engaging in advocacy and non-violent disruption both within and outside the profession in the active hope of preserving the health of the planet.

Resources for Naturopathic Doctors

- **Active Hope: How to Face the Mess We're in without Going Crazy.** Joanna Macy and Chris Johnstone. New World Library. 2012. www.activehope.info
- **Pachamama Alliance** is a global community that offers people the chance to learn, connect, engage, travel and cherish life for the purpose of creating a sustainable future that works for all. www.pachamama.org/engage
- **Project Drawdown** gathers and facilitates a broad coalition of researchers, scientists, graduate students, PhDs, post-docs, policy makers, business leaders and activists to assemble and present the best available information on climate solutions in order to describe their beneficial financial, social and environmental impact over the next thirty years. www.drawdown.org/
- **Global Footprint Network** is an international nonprofit organization which envisions a future where all can thrive within the means of our one planet, enables through a mission to help end ecological overshoot by making ecological limits central to decision-making. www.footprintnetwork.org
- **Climate change toolkit** for health professionals; curated by the Canadian Association of Physicians for the Environment, which works to better human health by protecting the planet. <https://cape.ca/campaigns/climate-health-policy/climate-change-toolkit-for-health-professionals/cape.ca/campaigns/climate-health-policy/climate-change-toolkit-for-health-professionals/>
- **Bullfrog Power**; reduce your emissions footprint and support the growth of renewable energy in Canada. www.bullfrogpower.com/
- **The Leap** exists to inject new urgency and bold ideas into confronting the intersecting crises of our time: climate change, racism and inequality. <https://theleap.org>
- **Women's Healthy Environments Network (WHEN)** is a trusted source of credible information on emerging environmental health topics, promoting the environment as a key determinant of public health. www.womenshealthyenvironments.ca
- **The Environmental Working Group's** mission is to empower people to live healthier lives in a healthier environment. With breakthrough research and education, we drive consumer choice and civic action. www.ewg.org/
- **Environmental Defence** is a leading Canadian advocacy organization that works with government, industry and individuals to defend clean water, a safe climate and healthy communities. www.environmentaldefence.ca.

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Remembering Walter Crinnion

Dr. Chris Spooner, ND

Those of you who have had the opportunity to learn from Walter will know how passionate he was about environmental medicine and teaching. He was an explorer and innovator with a fierce devotion to evolving the profession of naturopathic medicine but at the same time staying true to the principles by which we define ourselves.

I first met Walter when I interviewed for the newly created post doctoral fellowship at SCNM in 2003 and then worked with him in that position until 2006. What I remember most about 2003 was that the naturopathic profession and scope of practice in BC were being criticized, and changes in legislation were being considered. Naturopathic doctors were very concerned, as the profession faced intense scrutiny and it looked like our scope of practice was going to be curtailed. At the time, I was feeling disillusioned, wondering what the future held and whether I could actually continue to practice to the extent of my training. If not, did I even want to continue in the profession? So, when I was offered the position of post-doctoral fellow and moved to Arizona, with its broad scope, it was like being thrown a life preserver.

But it was so much more than just that. Working with Walter reignited my passion for naturopathic medicine. He became a friend and mentor. We talked at length about the trials and tribulations of naturopathic medicine in his early days, about how things had changed so much for the better and what an amazing future laid ahead if we could use modern research methodology to demonstrate what we had seen clinically: that our core therapies did indeed have merit and were effective.

His enthusiasm and excitement for the field was infectious, and his connection to the past generation of NDs illuminated the legacy that the founders of our profession left us: one of service, of treating people with respect and dignity, of staying true to principles, all while adapting to the changes in science, medicine, and society. He taught me that we have to constantly evolve and grow, but not to forget the history and the pioneers that came before us. He reminded me that our profession's history is one of perseverance.

I went down to Phoenix for Walter's Celebration of Life and was struck by the diversity of the people who attended, by the sides of Walter that I was not aware of, and by the paths that his life had taken since I worked with him. It lifted my spirits to see how much he was loved by the students, colleagues, and patients whose lives he had touched.

His death was a shock to all of us, and it shook me to my core. As we lose mentors and teachers, it's important to ask ourselves how we can stay connected to the principles of naturopathic medicine as we continue to expand our scope and add new therapies and approaches.

It seems we are reaching a point where the new generation of naturopathic doctors are beginning to shape the next phase of the profession and confront the challenges before us.

Walter's passion was for environmental medicine, which is based on a foundation of the naturopathic principles. The challenge for the next generation is to adapt to the new realities of the day and demonstrate the value and the necessity of our principles by not taking any shortcuts. There is no doubt that being constantly maligned by critics can be disheartening, but the answer is to demand of ourselves and our colleagues the highest level of professionalism, and to conduct ourselves with the utmost integrity and authenticity.



Tribute to Dr. Walter Crinnion, ND

Dr. Lyn Patrick, ND

I have known Walter since 1979, when we were a year apart at Bastyr University (then the John Bastyr College of Naturopathic Medicine). Since taking his postgraduate Physicians Course in Environmental Medicine (the very first one) in 2001, I have worked with him teaching, lecturing and writing for the past 18 years. Walter was a very special human being and I was blessed to know him. I doubt that I will meet or work with anyone as gifted in the remainder of my life; he was selfless, totally committed to teaching and helping other primary care providers, and as passionate about naturopathic medicine as his mentors, John Bastyr and Bill Mitchell NDs. I spent a precious day with him right before he left us and agreed to carry on his teachings in environmental medicine. We have lost a good soul and all of us are called on now to carry on his brilliance and his light. He has left very big shoes to fill and, believe me, it will take us all to fill them.

Walter J. Crinnion, ND was born in Oakland, California, USA, and graduated with the first class at what is now Bastyr University in Seattle, Washington in 1982. While there, he had the privilege of having John Bastyr, Bill Mitchell, and Joe Pizzorno NDs as teachers, mentors and, ultimately friends.

Walter embraced all of the naturopathic principles and soon began to explore why some patients were not getting better when safe and powerful natural healing techniques were used. He realized that some illnesses were due to environmental toxicant exposures. Since no one had begun to teach this aspect of medicine in medical schools, he began to search diligently through all the published medical journals and conferences to find answers. He became a student of Dr. William Rea, MD, a cardiothoracic surgeon who was a global pioneer of environmental medicine and a source of inspiration and knowledge for Dr. Crinnion in developing his environmental medical practice.

With over 30 years of medical practice, Walter Crinnion was considered one of the foremost experts in the field of environmental medicine. He created the environmental medicine curricula at Bastyr University, University of Bridgeport College of Naturopathic Medicine, and the Southwest College of Naturopathic Medicine (SCNM). At SCNM, he was endowed as Chair of the Department of Environmental Medicine from 2003 until 2013. He was also adjunct faculty at George Washington University School of Medicine and Health Sciences through the MMI post-graduate fellowship as well as faculty at University of Western States.

Since 1999, he has been providing an online training course (SpiritMed Medical Education) for licensed healthcare providers who wish to become more proficient in environmental medicine. He founded the Naturopathic Association of Environmental Medicine

(now the National Association of Environmental Medicine), a member organization that sets standards of care and offers education. Dr. Crinnion has not only lectured across North America and Europe at medical conferences (including the CAND's Health Fusion conference in both 2011 and 2015) where he was a sought-after speaker, but also founded the Crinnion Opinion podcast and blog to keep his global followers informed about the latest information and protocols in the environmental medicine field.

His first book: *Clean, Green and Lean* was published by Wiley & Sons in 2009. He was a guest on ABC's *The View* with Barbara Walters in 2001, discussing toxic compounds in our everyday environment and how to protect ourselves. Dr. Crinnion was also asked by the Huffington Post to be a blogger, providing readers with current and accurate information about health and the environment. He was the editor of the environmental medicine section of the *Alternative Medicine Review* journal until 2014, and has been appointed to the editorial review boards of the *New England Journal of Medicine*, *Pharmaceutical Biology*, *Science of the Total Environment* and the *International Journal of Hygiene and Environmental Health*. Dr. Crinnion has also authored over 25 articles many of which have been published in peer-reviewed journals (available on PubMed). Walter helped create laboratory panels that have become part of the standard of care for detecting environmental toxicant exposures, and has also been a consultant to several nutraceutical manufacturers to design supplements addressing environmental toxicant exposure. In 2019, he authored, with Joe Pizzorno ND, the textbook *Clinical Environmental Medicine* published by Elsevier.

With the help of his colleagues and friends Lyn Patrick ND and Cheryl Gray RD, Dr. Crinnion had a lifelong dream come true in putting together an environmental medicine conference in the U.S. for the last three years, entitled the Environmental Health Symposium. This year's symposium honored the "decades of love, laughter, and wisdom that Dr. Crinnion has shared with the world."

Walter's life ended far too soon leaving behind a grieving family and colleagues. His legacy lives on with his loving family and friends and with hundreds of grateful patients and inspired students. He is survived by daughters Sara Hall (Josh), Joanna Oliver (Jeff), Rebecca Rathbone (Matt), and Kate Crinnion, grandchildren Scott and Joseph Rathbone, mother Virginia Crinnion and sister Mary Padgett (William). His father, Walter P. Crinnion, and daughter, Marie, pre-deceased him. Walter lived in Phoenix, Arizona with his daughter Kate. He loved the outdoors, cycled and kayaked, and was challenging himself by training for his third Ironman event.



The Crossroads of the Planetary Health Paradigm: An Indigenous Perspective

Dr. Nicole Redvers, ND, MPHc

The *Planetary Health* movement is gaining significant traction in and around universities and organizations in North America and abroad. The Movement can be differentiated from the *One Health* paradigm, which recognizes that the health of people is connected to the health of animals and the environment,¹ fitting into the Centers for Disease Control (CDC) mandate of preventing zoonotic infections and dealing with anti-microbial resistance for example.

The Planetary Health paradigm attempts to be more holistic as it includes a broader connection to the ecosystem and climate change. However, both movements promote a breaking down of traditional silos with the goal of “collaborative, multisectoral, and transdisciplinary”¹ approaches at all levels of governance, research, and policy making.

In 2014, the Rockefeller Foundation and the medical journal *The Lancet* created the Commission on Planetary Health to better explore the scientific basis for what was considered a new transdisciplinary field merging human health with global environmental change.² This newly formed commission’s report called for the “training of [I]ndigenous and other local community members” to “help protect health and biodiversity” (p. 2007). This call was imbalanced without an equally loud call for the training of the (socially dominant) westernized in-groups by Indigenous groups to help protect health and biodiversity³ and created an unexpected division, often unknowingly, in Indigenous circles. More inclusive knowledge was included later by way of recommended training of Indigenous and other local community members as primary healthcare workers, while respecting their local knowledge and culture stating that this *can help protect health and biodiversity*.⁴ Regardless, the complete lack of Indigenous traditional knowledge (TK) incorporated into current planetary health paradigms is a continued underestimation and appreciation of that knowledge base.

Planetary Health is by no means a new innovative discipline, as is often suggested in academic circles, but is a deeply rooted connection that all our ancestors had to the land as a medicine place. To understand the planet and its functions is to understand oneself

in the Indigenous worldview. As Fiona Livingstone, who manages a suicide prevention programme at the University of Newcastle’s Centre for Rural and Remote Mental Health, says, “If the land is sick, you are sick.”⁵ You cannot have one without the other, the planet, place, and people are interconnected in a dynamic interface of ever-changing evolution together as one. If the Planetary Health movement is to be successful, it will need to platform itself as more culturally competent and critically conscious, and have a greater appreciation of marginalized voices.⁶

What does “transdisciplinary” actually mean in the context of Planetary Health? In the context of the Indigenous lens, it is bridged upon the realities of the world and universe in which we live. From the smallest particles on the planet described in the field of physics, enlarging into the context of living entities via genetics, to biochemistry, to physiology, to biomechanics, and then to the merging and interaction with the outside world of dietetics, microbiology, psychology, and the natural environment, and growing ever larger, to the universe from a space-occupying status, we are then brought back to our fundamental particles and where we came from—the circle of life is then complete.⁷ This circular Indigenous worldview based on interdependence and relationality to all living and non-living things provides the expanse of Western-based transdisciplinary science.

One of the founding naturopathic principles is to *treat the whole person*, with the common identification being that you cannot separate the body into sections and parts. This applies also to the complex universe, where everything is interdependent and a wide view is needed—not the intention to treat per se, but to allow nature to take care of itself, free from manipulation and intervention; that is, let nature heal itself. Simply by letting Mother Earth be, she will begin to rebound. By continually trying to extract from her, use her, manipulate her, she will continue to cycle out of balance—not unlike a human body going against its natural requirements for healthy food, air, water, social connection, and love. The relationality to the mother of all things has not necessarily been lost in the modern Planetary Health movement, as it was never a part of it from the beginning. This needs to change to have the best hope of success for the future seven generations to come.

So what is the role of naturopathic doctors in this newly recognized Western-based field? *The Lancet* commission has stated correctly that, “[h]ealth professionals have an essential role in the achievement of planetary health: working across sectors to integrate policies that

advance health and environmental sustainability, tackling health inequities, reducing the environmental impacts of health systems, and increasing the resilience of health systems and populations to environmental change."⁴

The Canadian Association of Physicians for the Environment (CAPE) has taken a leadership role in climate action in Canada, with a track record of impressive policy changes achieved,⁸ including but not limited to the successful push to have the Canadian Medical Association divest from fossil fuels.⁹ The Practice Green Health organization in the United States has been pushing to transform "health care worldwide so that it reduces its environmental footprint and becomes an anchor for sustainability and a leader in the global movement for environmental health and justice."¹⁰ The Canadian Nurses Association has put out a formal position statement on climate change;¹¹ in addition, the Canadian Federation of Nurses Unions released a comprehensive discussion paper, *Climate Change and Health*, with a formal call for nurses to act.¹²

Currently, there is no formal organization, position statement, or plan of action within the naturopathic community at large. Naturopathic doctors (NDs) are poised to work from a holistic paradigm when helping give voice to climate change and its consequences on human and planetary health. NDs are also primed to help advocate for Indigenous-led discourse on environmental stewardship with the land, water, and sky as a medicine place. Our medicine sits on the back of Indigenous communities the world over, and we have a formal responsibility to ensure the protection and sacredness of those healing domains remain rooted in a healthy planet and environment.

The Indigenous Elders tell us that we cannot claim to have a right to clean water without doing anything to protect that water and we cannot claim to have a right to clean air without doing anything to protect that air. Water for example in the Indigenous worldview is a living entity and has the same rights as humans to exist in a balanced and healthy state. Therefore, this is a formal call to action for the naturopathic community and profession to stand up and lead the way in sustainable practice, environmental stewardship, cross-cultural reverence, and multidisciplinary leadership rooted in both TK and modern research. The ecological grief increasingly felt by many is a "natural and legitimate response to ecological loss, and one that may become more common as climate impacts worsen;"¹³ however, we must come together as a community as without community we really will be lost. *We can* be very powerful together in our action working for the planet in the same way we do with people—holistically.

The syndemic model of health focuses more specifically on the "biosocial complex, which consists of interacting, co-present, or sequential diseases and the social and environmental factors that promote and enhance the negative effects of disease interaction."¹⁴ In essence, we are on the edge of having a synergistic epidemic ("syndemic") from planetary change that Indigenous elders in the

Northwest Territories have been talking about for decades. From the awakening of hidden diseases trapped in permafrost¹⁵ to the tilting of the planet's axis due to the polar-cap melt¹⁶ to the sinking of the ground around them due to sumps forming from permafrost melt,¹⁷ the Dene Elders knew about these events decades ago and talked specifically about these coming changes. From having a pure reverence for the land, the true reality becomes clear through the lessons given by the water, animals, sky, and through ceremony, leaving the responsibility to us to learn from those lessons and enact change for the progression of humanity.


The World Health Organization's Ottawa Charter (1986)¹⁸ is a must-read road map for NDs and other health professionals outlining steps and opportunity available for applied engagement to the planetary health movement. The charter specifically recommends advocacy (including political advocacy), in addition to mediation (health personnel have a major responsibility to mediate between differing interests in society for the pursuit of health¹⁸), which culminates into specific actions detailed in the reference. The Canmore Declaration: Statement of Principles for Planetary Health¹⁹ is also a great resource for information with a more holistic understanding of the movement and its potential application for action.

Both inVIVO Planetary Health (www.invivoplanet.com) and the Planetary Health Alliance (www.planetaryhealthalliance.org) hold open annual conferences and support discourse and publication in this area. In addition, the Indigenous Climate Action organization (www.indigenousclimateaction.com) is an Indigenous led self-determined organization with the goal of uplifting Indigenous worldviews and experiences within climate discussions.

Getting involved in the climate change discussion has never been easier with grassroots initiatives popping up around the country. In the Indigenous world view our responsibility lies to the next seven generations and there is hope that after some drastic changes that *will* come to our planet, humans will once again wake up to their responsibility. As the much-repeated proverb goes: *We Do Not Inherit the Earth from Our Ancestors; We Borrow It from Our Children.* 🌱


About the Author

Dr. Nicole Redvers, ND, MPHc was the first licensed practicing naturopathic doctor in North America who is Dene (a member of the Deninu K'ue First Nation Band). After growing up in Canada's isolated north, she pursued an advanced Western medical education in the south and has had the privilege of developing relationships with strong elders and medicine people. She has traveled the globe, studying traditional medicine systems in various countries and working with Indigenous patients, helping to bridge the gap between traditional and modern medical systems. In addition, Redvers developed Northern Canada's only integrative medicine clinic from the ground up. She also co-founded and currently chairs the Arctic Indigenous Wellness Foundation, whose purpose is to revitalize traditional wellness services in the Canadian north with a focus on the preservation of Traditional Medicines. Her foundation was awarded one million dollars as a Laureate of the 2017 Arctic Inspiration Prize to work with homeless people and those most at risk in the northern part of Canada. Dr. Redvers is a published author of the trade paperback, *The Science of the Sacred - Bridging Global Indigenous Medicine Systems and Modern Scientific Principles*, is a mentor with the Jane Glassco Northern Fellowship program and is a merit scholar at the Dartmouth Institute of Health Policy and Clinical Practice. She is currently assistant professor at the University of North Dakota's Community and Family Medicine Department's Indians into Medicine program.



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Engaging our Patients in Real Change for our Planet

Dr. Sonya Nobbe, ND

“You carry Mother Earth within you. She is not outside of you. Mother Earth is not just your environment. In that insight of inter-being, it is possible to have real communication with the Earth, which is the highest form of prayer.” ~ Thich Nhat Hanh

My Uncle insists that climate change is a natural process existing irrespective of our individual or collective actions. “The world is warming up anyway so why should I reduce my waste or carpool to work?” Some of my patients share this viewpoint and offering them scientific evidence to the contrary is unlikely to encourage behaviour change. But even our patients and colleagues who most strongly believe in anthropogenic climate change, find our environmental crisis so devastating that they’re immobilized; the responsibility feels overwhelming and the impact of actions taken feels insignificant. As healthcare professionals, many of us are acutely aware of the health threats posed by climate change, from Northward advancement of tick vectors and newly established colonies of exotic mosquito species, to cardiac conditions aggravated by air pollution, and mental health concerns characterized by “eco-anxiety” and PTSD.¹⁻⁵ We recognize that *somehow*, we must convince our patients to move beyond the inertia towards effective change. This is where I feel so fortunate to be part of a profession *perfectly* placed to do this, for at least 3 reasons.

As naturopathic doctors, we spend a lot of time encouraging our patients to adapt their behaviour toward healthier outcomes. We understand that healthier choices, such as choosing organic produce and riding our bike to work, are frequently also environmentally responsible choices, but few patients take time to consider *why* this is. They don’t yet understand that humans are more than stewards of our environment – we’re manifestations and extensions of it. I offer my patients at least three examples of this:

First, I often speak about our human microbiome as an ecosystem analogous to the microbiome in soil. Resiliency of ecosystems such as these are defined by species *diversity*, so that a healthy human or garden benefits from early exposure to microbe-rich environments. Climate change threatens microbial diversity *globally* and some concern exists for extinction of essential human gut microbes, with unknown consequences.⁶ Second, I might remind patients about how our circadian rhythms (centrally *and* in our organs), move along with Earth’s rhythms. Environmental exposures that interrupt these rhythms, such as urban light pollution, electromagnetic fields

and possibly even climate change directly, are correlated to a variety of health concerns, including through their impact on sleep quality.⁷⁻⁸ Deep restorative sleep in which we heal from toxic environmental exposures, requires that we’re in sync with these rhythms.⁹⁻¹⁰

Some patients respond more to a conversation about epigenetics and an exploration of how our DNA is manipulated by cumulative lifetime environmental exposures.¹¹⁻¹² Others are more interested in Traditional Chinese Medicine or Ayurvedic systems of healing, and their perception of humans as microcosms of the environment date back thousands of years. Climate change itself reflects the dance between the Earth’s fire, water, and carbon cycles, in which deforestation (carbon) changes the water cycle, leading to more intense droughts and wildfire risk in distant regions.¹³⁻¹⁴

By teaching patients that every facet of their biology is influenced by environmental exposure, we’ve taken climate change from an intangible, global phenomenon to one that’s incredibly personal. This is a significant motivator of lasting change. Given that NDs already tend to view the body as ecosystems with infinite interconnected parts, I can’t think of another health profession *more* prepared for this role of Teacher in the effort toward environmental sustainability. I’ve posted my patient handout on our website and encourage you to share it or reproduce it in your own style, to help motivate your patients towards deeper positive lifestyle change in partnership with our environment.

This takes us to the next reason why our profession is primed to make lasting change in the face of climate change. Experiencing climate change as a personal phenomenon naturally encourages a sense of environmental responsibility but, like any responsibility, the obligatory lifestyle changes can quickly transition from inspiration to burden and chore. This is our opportunity to reframe the discussion about climate change from one of conflict (i.e. fighting the enemy), to one of *connection*. Rather than giving up lifestyle luxuries to reduce greenhouse gas emissions and win the battle, this process of change is about gaining a deeper connection to our environment through our day-to-day experiences. Research tells us repeatedly that

our immune system, nervous system, and endocrine systems benefit tremendously from time outdoors and we see significant cultural shifts towards appreciation for mindfulness and forest bathing, over material goods.¹⁵⁻¹⁶ As Naturopathic Doctors, our willingness to bring the spirituality back into medicine offers our patients the chance to rediscover their innate connection with our environment and themselves. From this perspective climate change isn't our enemy – it's our teacher.

Finally, let's explore how naturopathic *interventions* also contribute unique approaches for addressing the current climate crisis. This became clearer to me about 12 years ago after serving on a board with Health Canada officials, whose purpose was to help Canadian communities adapt to the effects of extreme heat events. At the time, this meant preventing adverse health outcomes by implementing early warning systems for communities, and training physicians and vulnerable populations about how to stay cool during extreme heat events. It meant removing people from the harmful environment or applying technology to change the environment. However, in my work as a Naturopathic Doctor, "adapting" also means directly supporting how a human body operates in the given environment. In the current climate crisis, where change is happening *now* and progressively so, this form of adaptation is a critical ally. Botanical adaptogens, interventions that improve organ reserve, and recommendations designed to reverse heart disease rather than suppress symptoms (which can make us less adaptable to external temperatures), are all examples of how NDs are well placed to help our patients adapt to the upcoming climate changes. And of course, helping patients mitigate environmental toxic exposure improves adaptability already, and with a positive feedback loop of our own that reduces ecological damage.

When communicating with patients about the impact of the environment on their health, I find it useful to apply the concepts of Environmentally-Acquired Illness (EAI). On the surface, a literature review of climate change and disease reveals a shocking list of health conditions ranging from pulmonary and cardiac conditions, to cancer and infectious or zoonotic illness. The Lancet Commission on Pollution and Health further states that "pollution, which is "intimately linked to global climate change", is the largest environmental cause of disease and death in the world today".¹⁷ But EAI provides a framework for exploring *how* environmental contaminants can contribute to complex chronic conditions such as Fibromyalgia and Multiple Chemical Sensitivity, from a systems biology approach.¹⁸

There's one final lesson to flesh out of this new climate change discussion. In his book, "Climate, A New Story", Charles Eisenstein suggests that climate change is the second world event to teach humanity that we're all intimately connected. (The first event was the use of the atomic bomb.) What you do affects me and what I do affects you. He suggests that climate change is an initiation process that brings communities closer together through deeper awareness of our connection to each other. From a business perspective,

this means that embracing ecological health as a professional responsibility is a naturally community-driven approach that can strengthen your reputation and broaden your reach as a naturopathic doctor. Since including environmental responsibility in our clinic mandate 6 years ago, the business benefits have been significant and rewarding. Teaching patients how to source environmentally-responsible products has required networking with many like-minded businesses and identifying strategic community partners. It's put us in touch with patients who are unfamiliar with naturopathic medicine but who more quickly grasp "root cause" approaches with belief systems that align well with ours. We've enjoyed increased internet traffic with social media campaigns that engage people with healthy behaviours, such as the David Suzuki Foundation outdoor challenge, and have connected with hundreds more like-minded people through various fundraising events.

As we take ourselves and our patients through the process of aligning our activities with the needs of our environment, at some point the deepening awareness of vast global ecological destruction becomes too overwhelming. During these times I like to remember one of our guiding principles, "The Healing Power of Nature". It refers just as much to the ability of ecosystems to regenerate, as it does to our own body's capacity for healing. Life is resilient and sometimes just the smallest nudge triggers profound healing.🌱

About the Author

Dr. Sonya Nobbe ND graduated from CCNM in 2007. She is the founder of Kingston Integrated Healthcare Inc., a multi-disciplinary facility that brings together a dozen health professionals for deeper collaboration and professional growth. 2019 marks their 10-year anniversary! With the help of her team, Sonya enjoys supporting patients with complex chronic conditions, such as Chronic Fatigue Syndrome, Fibromyalgia, Multiple Chemical Sensitivity, and Lyme disease. She welcomes your interest and inquiries: www.KIHC.ca.

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Observing Linkages between Biodiversity and Planetary Health

Vicki Simkovic and David H. Nelson

“Of all the teachings we receive, this one is the most important. Nothing belongs to you. Of what there is, of what you take, you must share.”

~ lessons from Kinoomaagewaapkong, “the rocks that teach”

In a small lake in the Kawarthas, an aggressive invasive macroalgae has arrived. It spreads easily by broken fragments caused by boaters passing through the area, and forms dense mats on the bottom of the lake that are so thick (up to two metres) that it becomes impossible for fish to swim through or spawn, or for native plants to grow. Once introduced, it is impossible to eradicate, and will permanently alter the biodiversity and vegetation composition within the lake.¹ A few hundred kilometres away in southwestern Ontario, another wetland is being lost as land is cleared for a development project. And even further away in Latin America, several hundred more acres of tropical rainforest is being cleared for cattle grazing and other crops like soybeans, while ecological ‘dead zones’ that form in the ocean by mountains of plastic increases.² Every day we are slowly losing biodiversity around the world, as relentless progress chips away pieces of the tree of life, leaving in its place an uncertain future, at a time when we are just beginning to understand what this loss will mean for our species, and to human health.

According to the recently published Global Assessment Report on Biodiversity and Ecosystem Services by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, in May 2019, over one million plant and animal species out of a total of eight million species on earth are at imminent risk of extinction, many in the next few decades due to human activities.² Population numbers across many taxa (i.e. individual species or entire groups of organisms) have declined globally. Reductions include a 60% decline in 4,000 vertebrate species over 44 years,³ a 75% decline in flying insect biomass in protected natural areas in Germany over 27 years,⁴ a 40-60% decline in shorebirds, grassland birds, aerial insectivores in Canada over five decades,⁵ an 83% decline in freshwater fish over 44 years,³ plant extinction rates that are now 500 times faster than natural extinction rates,⁶ and a reduction in diversity of soil microbes.³

The Global Assessment has also identified the five main drivers of biodiversity decline: changes in land use (i.e. farming), overfishing, direct exploitation of organisms, climate change, and invasive alien

species.² Habitats are shrinking to meet the needs of population growth and increased consumption, with agricultural farming and overfishing being the main drivers of the loss.² More than 33% of the world’s land surface and 75% of freshwater resources are now devoted to crop or livestock production, with the greatest losses occurring in the tropical regions, home to the largest biodiversity on the planet.² Over 100 million hectares of tropical forest was lost from 1980-2000, mainly from cattle ranching in Latin American and palm oil plantations in South-East Asia.² Wetlands are the most affected type of habitat impacted around the globe, having decreased by 87% (the loss is three times that of forest loss).³ The introduction of invasive alien species is the second greatest driver of species extinction following habitat loss, and they have risen by 70% since 1970 across 21 countries.² Plastic pollution has increased ten times since 1980, with 300-400 million tons of heavy metals, solvents, toxic sludge and other industrial waste being dumped annually into the global waters, creating more than 400 oceanic ‘dead zones’, forming an area greater than the size of the United Kingdom.²

What are the global, long-term implications if natural landscapes, such as those mentioned above, continue to dwindle and play less importance in people’s lives?

It is well understood that biodiversity is essential to fostering resilient, healthy natural ecosystems,^{7,8} and that these ecosystems in turn supply humanity with a diverse array of ecosystem services, some directly linked to human survival and basic human rights (i.e. food, water, shelter)⁹ and others linked in intricate and complex ways to human health (the complete state of physical, mental and social well-being).^{2,8,9} An emerging science is examining these intricate linkages, growing out of an urgent need to address the many challenges of the Anthropocene age, the current period of Earth’s history where human-influenced activities have dominated global environmental processes.

DEFINITIONS:

- **Biodiversity** – variety and variability among all living organisms (terrestrial, marine, aquatic species) and the ecological complexes of which they are a part – including diversity within species, between species and their ecosystems.¹⁰
- **Ecosystem Services** – The multitude of benefits that biodiversity provides, including food, medicine, livelihoods, clean air, water and soil.³
- **Taxon (plural Taxa)** – A taxonomic group of any rank, such as a species, family, or class, used in the science of biological classification.
- **Anthropocene** – The current geological time period is defined as being human influenced (or anthropogenic), based on global evidence that climate and environmental processes are being influenced by human activity.
- **Symbiocene** – A new term to counter the period of human dominance known as the Anthropocene, supporting a philosophy that seeks to transform the foundations of society from an economical, competition focus to one of symbiosis and interconnectedness, in turn promoting hope and optimism.²⁵
- **Living together for mutual benefit**, affirms the interconnectedness of life and all living things. Puts a human worldview back into the community of life.

Biodiversity and Inflammation

One growing concern is the potential link between two global trends: declining biodiversity and increasing incidence of inflammatory disease, particularly in developed nations.¹⁰ The losses in biodiversity since the 1970s are almost in tandem with the rise in inflammatory-mediated, or non-communicable diseases (NCDs), such as allergies, asthma, inflammatory bowel disease, cardiovascular disease, some cancers, and obesity.^{10,11} The Biodiversity Hypothesis posits that the altered composition of gut and skin microbiota associated with these NCDs may be connected to reduced contact with the natural environment, which then reduces human exposure to diverse microbes ('Old Friends') that are essential for healthy immunoregulation.^{12,13}

Urban environments ('concrete jungles') may prime the inflammatory cascade that promotes "dis-ease".¹³⁻¹⁵ For example, Hanski and his colleagues found that adolescents with atopic sensitization (i.e. allergic disposition) had lower environmental biodiversity surrounding their homes as well as lower diversity of gammaproteobacteria on their skin.¹⁶ The rise in non-communicable diseases must therefore be taken into account along with the threat of biodiversity loss, both current and future, if we are truly find a solution to both at the same time.^{12,17} It has been recently suggested by Richard Horton, editor-in-chief of *The Lancet's* edition on Planetary Health, and by others before him, that we cannot have healthy people on a sick planet, indicating a fiduciary responsibility in collaboration with the earth instead of the 'conquering motif' that has dominated the main timelines of history – humans as caretakers, rather than users of the earth.¹⁸

Ecological Grief

The loss of a once treasured nature area, or tuning in to news about species extinctions, climate change, environmental disasters and pollution can invoke many feelings, such as sadness, anger and despair. The pain of ecological grieving is a recognized psychological response to ongoing change in the Anthropocene age, with real implications for mental health.¹⁹ It is clear that we as humans have not paused, as a collective, to determine if the mindset of conquering nature, which began as an attempt to survive the external environment, would come back to haunt us. Those who have spent their lives in an urban 'concrete jungle', for example may be grieving (at least unconsciously) for a world they never knew in the first place. Already, Indigenous groups such as the Inuit in Nunatsiavut, Labrador are directly experiencing the mental anguish of profound environmental change and loss of traditional lifestyles.¹⁹ There is considerable unease in Indigenous communities around the globe who report dramatic changes in their mental health as they see "the land" change into something they have never witnessed before. To Indigenous peoples the land is sacred and part of the global interwoven web of collaboration in the survival and vitality of all species, including humans.²⁰ This mindset has truly made Indigenous peoples stewards of the earth – globally, nature is declining less rapidly in areas that are traditionally owned, managed or occupied by Indigenous peoples, although Indigenous lands are still facing pressures from resource extraction, deforestation, mining, pollution and water insecurity.²

Integrative Strategies

We must approach the problems of sick people and a sick planet simultaneously. It was philosopher and scholar Glenn Albrecht who wrote a manifesto for transitioning our mindset from one of a conquering motif to one of collaboration, where the interconnectedness of living things is emphasized. He proposed this mindset as the foundation for the next era of human history, the Symbiocene (from the Greek *symbiosis*, companionship), and like-minded people are beginning to mobilize.²¹ Recently, a group of international experts from many disciplines convened at the

7th inVIVO Planetary Health meeting in Canmore, Alberta, and provided the framework for the Canmore Declaration, a Statement of Principles for Planetary Health (see Box 1).²²

BOX 1:

According to the 2018 Canmore Declaration, Planetary Health is defined as the interdependent sustainable vitality of all natural and anthropogenic ('human-made') ecosystems. Vitality (that is, the highest level of wellness) is connected at scales of person, place and planet; the ecosystems that exist in corporate board rooms, individual households, local communities, national governments can influence ecosystem functioning at the level of the intestinal villus. If any part of this interconnected system of micro, meso and macro ecosystem neglects the sustainability of wellness (of humans and biodiversity at-large), then health at all scales, planetary health will be in peril.²²

As a result of these mindset shifts, there are new avenues for uniting public and planetary health. This philosophy is positioned as a strategy for reducing the financial burden of global health and at the same time seeks to steady the dizzying rate at which NCDs are growing.²³ Naturopathic doctors should be front and centre of this new mindset shift – though it has almost never been part of the conversation until recently. The philosophy of Planetary Health is directly in line with naturopathic philosophy, and opportunities to incorporate this mindset into the educational curriculum, and/or interdisciplinary collaboration with like-minded professionals should be encouraged.

The loss of biodiversity, the rise in NCDs, the decline in mental health and ecological grieving over an unsettling and uncertain time are a response to a system of earth-interface that is no longer tenable. We must exit the Anthropocene and lay down the foundations for entering the Symbiocene - that is to stop conquering and start collaborating with all life forms on earth. It is going to be easy? No. Can we do it? Yes.²⁴ 🌱

INFO BOX - Strategies and Tips for NDs to include Planetary Health in treatment plans:

- **Discuss ecological grief with your patients** – address environmental issues in practice with your patients, and consider its unique impact to the mental health of each patient. See the work of Dr Ashlee Cunsolo, PhD for more details: <https://ashleecunsolo.ca/about/>.
- **Become aware of invasive species & plant native species.** If you have a medicinal plant garden, become aware of what species might become problematic or invasive to the natural environment and impact local biodiversity. For example, although Burdock (*Arctium minus* or *A. lappa*) is a useful medicinal plant, it is also a non-native invasive species to North America, and kills many bird species (i.e. warblers, kinglets) yearly, who become stuck in the burs while hunting for insects and die, unable to escape.²⁶ If you grow burdock, please cut and dispose the seed heads before they develop. Another example, sea buckthorn (labelled a new “opportunity crop”), although useful in treating skin conditions, is escaping into natural areas in Ontario, where it is outcompeting native flora. Plant non-invasive native species to promote local biodiversity and support pollinators.
- **Become aware of the source of herbal medicines.** Know the source of herbal medicines, to ensure they have been sustainably harvested. In Ontario, American ginseng (*Panax quinquefolius*) is endangered and goldenseal (*Hydrastis canadensis*) is threatened, both face significant pressures from harvesting for medicinal purposes. Nearly all goldenseal populations in North America are wild harvested.²⁷

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