
In the Permanent Peoples' Tribunal Session on Human Rights, Fracking and Climate Change

**ON PETITION FOR AN ADVISORY OPINION ON THE QUESTION OF
THE IMPACTS OF FRACKING AND CLIMATE CHANGE**

**SUBMISSION OF
PETITIONERS REPRESENTING
NATURE'S RIGHTS**

March 31, 2018

LISA J. MEAD, LL.M.
EARTH LAW ALLIANCE
+44-7940-889504
lisa@earthlawyers.org
Prosecutor representing Nature's Rights

DR. MICHELLE MALONEY
AUSTRALIAN EARTH LAWS ALLIANCE
+617-419-497-596
convenor@earthlaws.org.au
Co-Prosecutor representing Nature's Rights

Assisted By:
PHOEBE BISHOP & CASSIE HEASLIP
AUSTRALIAN EARTH LAWS ALLIANCE

The Permanent Peoples’ Tribunal on Human Rights, Fracking & Climate Change

Violations of Nature’s Rights

Table of Contents

Issues Addressed in this Submission.....	1
Global Emergency Demands Radical Solutions.....	2
Emergent Legal Recognition of Nature’s Intrinsic Rights.....	4
Rights of Nature Laws	5
What are the Rights of Nature?	7
Factual Evidence – Specific Rights of Nature Violated by UOGE	8
Governments Banning UOGE Activities	12
Responsibility and Liability	13
Restorative measures	14
Conclusions	15

Issues Addressed in this Submission

This submission focuses primarily on question 4 under review by the Tribunal: “What is the extent of responsibility and liability of States and non-state actors, both legal and moral, for violations of the rights of nature related to environmental and climate harm caused by these unconventional oil and gas extraction techniques?”

We will argue that unconventional oil and gas extraction (“UOGE”) violates the rights of nature to exist, thrive, regenerate and evolve and that both state and non-state actors are responsible, accountable and liable for these violations.

As other parties addressing the Tribunal are focusing on the human rights impacts of climate change and fracking, our submission will focus mainly on harms to nature and climate.

We request that the Permanent Peoples’ Tribunal:

- (i) Examines the factual evidence from Australia, the USA and other jurisdictions where UOGE is occurring and determines that UOGE violates the rights of nature in all countries that allow the practice;
- (ii) Determines the accountability of relevant parties for violations of the rights of nature in jurisdictions impacted by UOGE;

- (iii) Determines what restorative measures should be taken; and
- (iv) Determines what preventative and precautionary measures should be taken to prevent future violations of the rights of nature.

Global Emergency Demands Radical Solutions

It is difficult to convey in words the enormity of the threat to all species that climate change brings. Climate change represents an urgent, unprecedented and imminent threat to all life on Earth. We will repeat and highlight this, because it is very hard to take in. **Climate change represents an urgent, unprecedented and imminent threat to all life on Earth.**

Already, we are in the midst of the sixth mass extinction of species,¹ caused by many systemic factors relating to human activities, not least over-population and over-consumption, which has been fuelled especially over the last 70 years by the availability of cheap and abundant fossil fuels.

We are already experiencing more extreme weather events globally, many of which are made more severe, or more likely to occur, by human-induced climate change.² This year, we have witnessed the fastest decline in Arctic sea ice in the last 1,500 years³. We know that if we do not radically reduce our fossil fuel use **now**, then extremely harsh climate change impacts will result in devastating droughts and floods, extreme weather events and destruction of lands, soils and water, leading to severe famine and starvation, not just of our own species. In such a scenario, it is predicted that human climate migrants will be anywhere between 25 million to 1 billion people by 2050⁴, mainly from the Global South, where poverty and malnutrition is already rife. Inevitably, the impact on other species and ecosystems will also be catastrophic.

Notwithstanding the now widespread international agreement that, in order to tackle climate change, radical and swift interventions are necessary, actual commitments and actions remain limited, inadequate and are often undermined entirely by the continued issuance of government licenses to exploit remaining fossil fuel reserves.

Considering the major problems we face due to climate change, the recent expansion in earnest of unconventional oil and gas extraction needs to be viewed in light of our overall exploitation of fossil fuels, because UOGE is simply exacerbating the 'death by a thousand cuts' that our biosphere is currently enduring at the hands of humans. Moreover, unconventional gas extraction is now considered to be a leading cause of climate change, because of the escape of unburned methane during the extraction process. This has led to a

¹ Ceballos, G., Ehrlich, P.R., Dirzo, R., Biological annihilation via the ongoing sixth mass extinction signaled by vertebrate population losses and declines, PNAS July 25, 2017. 114 (30) E6089-E6096.
Retrieved from: <http://www.pnas.org/content/114/30/E6089>.

² See Carbon Brief's online map attributing extreme weather to climate change, retrieved from: <https://www.carbonbrief.org/mapped-how-climate-change-affects-extreme-weather-around-the-world>.

³ See Vox news report, 16 Feb 2018, retrieved from: <https://www.vox.com/energy-and-environment/2017/12/12/16767152/arctic-sea-ice-extent-chart> and for background data: Arctic Program website: <https://www.arctic.noaa.gov/Report-Card>.

⁴ See ReliefWeb report, 21 Aug 2017, retrieved from: <https://reliefweb.int/report/world/climate-migrants-might-reach-one-billion-2050>.

spike in US methane emissions of 30% during the decade 2002 – 2012. Previous predictions indicated that methane escapes from fracking sites of only 3% would make unconventional gas as bad as coal extraction, in terms of its climate impacts, due to unburned methane's extremely high potency as a greenhouse gas⁵. Actual studies of methane levels in 2013 and beyond⁶ have shown methane leakage over fracking basins as high as 9%.⁷

If unconventional oil reserves are taken into account (i.e. oil shale, tar sands, extra heavy oil and natural bitumen), global oil reserves increase by a factor of four over current conventional reserves.⁸ In 2013, the International Energy Agency declared that two-thirds of all proven fossil fuel reserves must be left unburned if global warming is to be held to 2°C. In 2015, a study estimated the remaining quantities and locations of the world's oil, gas and coal reserves, and estimated how much of the remaining fossil fuel reserves could be burned, if we have any hope of remaining below 2 degrees of global warming.⁹ The researchers stated that "development of resources in the Arctic and any increase in unconventional oil production are incommensurate with efforts to limit average global warming to 2°C."¹⁰

The conclusion from this and other data is that any continued exploitation of unconventional oil and gas is entirely indefensible from the perspective of climate change alone. We will also demonstrate below that continued exploitation of unconventional oil and gas is also indefensible from the perspective of the violation of nature's rights.

As mentioned above, as well as hydraulic fracturing to obtain gas, UOGE also includes extraction of oil from tar sands, oil shale and heavy oil deposits, plus other techniques for obtaining oil from coal. All of these techniques have severely negative impacts on nature, and of course add to our global carbon footprint. In this submission and the appended evidence, our examples focus largely on harms caused by hydraulic fracturing, coal seam gas, coal-bed methane and oil sands extraction, however, there are many other examples from these and other kinds of UOGE that we could have included. All point to the same conclusion: nature's rights are being seriously violated by UOGE.

⁵ Howarth, R.W., Santoro, R., Ingraffea, A., (2011) Methane and the greenhouse-gas footprint of natural gas from shale formations, *Climatic Change* DOI 10.1007/s10584-011-0061-5. Retrieved from: <http://www.atkinson.cornell.edu/Assets/ACSF/docs/attachments/Howarth-EtAl-2011.pdf>.

⁶ See Environmental Defense Fund's Methane Research: The 16 Study Series. (2012-2017). Retrieved from: https://www.edf.org/sites/default/files/methane_studies_fact_sheet.pdf.

⁷ Miller, S.M, et al, Anthropogenic emissions of methane in the USA, *PNAS* November 25, 2013. 201314392. Retrieved from: <http://www.pnas.org/content/110/50/20018>.

⁸ World Energy Council (2013) 2013 Survey of World Energy Resources. Retrieved from: <https://www.worldenergy.org/publications/2013/world-energy-resources-2013-survey/>.

⁹ The geographical distribution of fossil fuels unused when limiting global warming to 2 °C, Christophe McGlade & Paul Ekins, *Nature* volume 517, pp 187–190 (08 January 2015). Retrieved from: <https://www.nature.com/articles/nature14016>.

¹⁰ Note that 2°C of warming is now considered to be an inadequate goal, with 1.5°C recognized as the 'safe' upper limit of global warming. However, recent evidence suggests that we may have already 'locked in' 1.5°C of warming, or at least 1.1°C, measured from a baseline of pre-industrial temperatures. See Mauritsen, T. and Pincus, R., Committed warming inferred from observations, *Nature Climate Change* vol.7, pp652–655 (2017). Retrieved from: <https://www.nature.com/articles/nclimate3357>.

Emergent Legal Recognition of Nature's Intrinsic Rights

In considering nature's rights in relation to climate change and UOGE, it is important to recognise that there is already recognition in a number of international instruments that nature has the intrinsic right to exist, demonstrating that over the last 40 years our collective thinking in industrialised societies has been shifting from a purely anthropocentric and utilitarian perspective, to a worldview that recognises nature's intrinsic worth for its own sake.

For example, in 1982, 111 countries voted to adopt the World Charter for Nature¹¹, which recognises that "Every life form is unique, warranting respect regardless of its worth to humans". It recognised that humankind "is a part of nature and life depends on the uninterrupted functioning of natural systems".

Prior to that, in 1980, the International Union for the Conservation of Nature had recognised that "Every form of life warrants respect independently of its worth to people. Human development should not threaten the integrity of nature or the survival of other species".¹² In August 2016, the World Conservation Congress of the IUCN went further and adopted Resolution 100, incorporating the Rights of Nature as the organisational focal point in IUCN's decision making.¹³ While not legally binding, these IUCN Resolutions influence global and national conservation policy.

To date, although legally binding treaties fall short of recognising nature's rights, they nevertheless impose extensive obligations on states to protect the diversity of life¹⁴, with targets set for protecting land and marine areas, especially those rich in biodiversity.¹⁵

And again, while falling short of recognising nature's right to exist and thrive for its own sake, we also see the growing legal recognition of the need for healthy ecosystems and also human duties to the environment, with 140 countries to date including environmental protection of one kind or another in their constitutions and 86 of them explicitly recognising the human right to a healthy environment.¹⁶

¹¹ UN General Assembly, 28.10.1982, A/RES/37/7.

Retrieved from: <https://www.un.org/documents/ga/res/37/a37r007.htm>.

¹² World Conservation Strategy, IUCN (1980). Retrieved from: <https://portals.iucn.org/library/efiles/documents/wcs-004.pdf>.

¹³ World Conservation Congress, Jeju, Republic of Korea, 2012, WCC-2012-Res-100-EN.

¹⁴ E.g. At the 1992 Earth Summit in Rio de Janeiro the parties adopted the UN Convention on Biological Diversity. Retrieved from: <https://www.cbd.int/convention/>.

¹⁵ In 2010, the parties to the UN Convention on Biological Diversity met in Japan and adopted the Aichi Principles, setting targets of protecting 17% of their land and 10% of marine areas by 2020, especially those rich in biodiversity. These targets are not directly binding on parties to the CBD. The expectation is that the targets will be incorporated by the parties into their national biodiversity strategies.

¹⁶ Boyd, D. (2012) *The Environmental Rights Revolution, A Global Study of Constitutions, Human Rights, and the Environment*, UBC Press, p59 and also the 2011 OHCHR study, *Human Rights and the Environment*, compiled by the Dutch Section of the International Commission of Jurists (2012). Retrieved from: http://earthlawyers.org/wp-content/uploads/2014/08/ANNEX-II_Call_for_input_NJCM_OHCHR-2011-Constitutional-rights-to-environment.pdf.

Finally, the United Nations Harmony with Nature program promotes the development of a non-anthropocentric relationship with nature, as a means to combat the multiple and growing adverse impacts on ecosystems and natural cycles caused by human activities. In 2016, its Interactive Dialogue produced a report to the UN General Assembly, based on submissions from more than 120 experts from 33 countries on Earth Jurisprudence and its potential application to numerous areas of life.

In light of the current failure of the international legal system, and of so many national legal systems, to recognise in legally binding ways nature's intrinsic right to exist, this submission therefore draws on the currently non-binding legal principles set out in the Universal Declaration of the Rights of Mother Earth.¹⁷ It also references the growing body of Rights of Nature and legal personhood laws around the world, primarily in Ecuador, Bolivia, New Zealand, USA, India and Colombia, in order to articulate what the rights of nature are, and how the impacts of UOGE violate these rights.

Our arguments include the proposition that the growing body of Rights of Nature and legal personhood laws around the world are evidence of an emerging customary international law of the rights of nature. Furthermore, it is suggested that the growing number of countries enacting rights of nature laws, and the recent court cases applying Earth Jurisprudence principles, demonstrate that rights of nature is a moral and ethical imperative whose time has come.

Rights of Nature Laws

The Universal Declaration of the Rights of Mother Earth ("the Declaration") was created by civil society at the People's Congress in Cochabamba, Bolivia in 2010. It asserts the rights of all of the Earth community to exist, thrive and evolve. This Declaration is not presently formally recognised in international law, but it represents the agreed values of thousands upon thousands of members of civil society and represents the core legal principles – and growing cultural norms – of the rights of nature movement. It has been estimated that 30,000 people from more than 100 countries attended the People's Congress and played a part in drafting the Declaration. Since its adoption in Cochabamba, over 850,000 individuals have signed a petition calling for the United Nations to adopt a Universal Declaration of the Rights of Mother Earth¹⁸.

The Declaration was submitted to the UN shortly after the meeting in Cochabamba and was formally considered at the April 2011 UN Dialogue on Harmony with Nature. It featured prominently at the June 2012 UN Conference on Sustainable Development (Rio+20) and the Final Declaration of the Rio+20 People's Summit called on 'governments and people of the world to adopt and implement the Universal Declaration of the Rights of Mother Earth'. While the final UN consensus document did not reference the Declaration, it did refer to the recognition of 'rights of nature' in the governing system of some of its member states.¹⁹

¹⁷ For the original text of the Universal Declaration of the Rights of Mother Earth, see: <http://pwccc.wordpress.com/programa/>.

¹⁸ See the petition website at: <http://www.rightsofmotherearth.com/>.

¹⁹ Sheehan, L., (2013), Realizing nature's rule of law through rights of waterways in *Rule of Law for Nature: New Dimensions and Ideas in Environmental Law*, Ed. Voigt, C., Cambridge University Press, p.222.

The Rights of Nature, as articulated in the Declaration, are outlined in the next section of this submission.

In addition, this submission refers the Tribunal to the growing body of Rights of Nature legislation and court decisions emerging around the world. These include the following:

- In 2008, Ecuador revised its Constitution to include provisions relating to the Rights of Nature (Articles 71-74). It acknowledges that nature is the source of all life, is indivisible and interconnected and is the primary source of all law. Courts in Ecuador have heard many rights of nature cases, including the 2011 Vilcabamba River Case, which found in favor of the rights of the river.²⁰
- In 2010, Bolivia passed the Act for the Rights of Mother Earth, which acknowledges the Rights of Nature and creates institutional structures such as the Ombudsman for the Rights of Mother Earth. The law enables all of its citizens to speak on behalf of, and defend, the Rights of Nature.²¹
- Since 2001, dozens of local communities in the USA have passed local laws/ordinances, which set out the rights of local human and non-human communities. These laws include provisions asserting the rights of rivers, streams, aquifers and water systems; land, ecosystems and soils; forests and biodiversity. These laws also empower local communities to speak on behalf of, and defend, the health of their natural communities.²²
- In New Zealand, Maori iwi (a confederation of tribes) have been successful in negotiating agreements with the New Zealand Government, under the Treaty of Waitangi²³, which have granted legal rights to ecosystems. Under this process, the New Zealand Government has acknowledged the Whanganui River as “a legal entity with standing in its own right” and “the legal interests of the river will now be managed by representatives from the Whanganui iwi and the Crown.”²⁴ The governance of the Te Urewera Forest has also been the subject of negotiations between Maori iwi and the Crown, and in 2014 the forest was removed from the National Parks system and recognised as an independent legal entity, with its own rights and governance structure.²⁵ At the end of 2017, Mt. Taranaki was also recognised as a legal entity.²⁶

²⁰ Case report by Natalia Greene for the Global Alliance for the Rights of Nature, retrieved from <https://therightsofnature.org/first-ron-case-ecuador/>.

²¹ Ley de Derechos de la Madre Tierra, original Spanish version, and Law of Rights of Mother Earth, English translation, retrieved from: <https://bolivia.infoleyes.com/norma/2689/ley-de-derechos-de-la-madre-tierra-071>

²² See <https://CELDf.org>.

²³ For the Treaty of Waitangi Settlement Agreements, see: <https://www.justice.govt.nz/maori-land-treaty/office-of-treaty-settlements>.

²⁴ See Te Awa Tupua (Whanganui River Claims Settlement) Act 2017, retrieved from: <http://www.legislation.govt.nz/act/public/2017/0007/latest/whole.html>.

²⁵ See the Te Urewera Act 2014, retrieved from:

<http://www.legislation.govt.nz/act/public/2014/0051/latest/DLM6183601.html>.

²⁶ For discussion of indigenous relationships with the natural world in New Zealand and how they differ from a Western, liberal construct of nature, see: Iorns Mallaganes, C. (2008) Maori Cultural Rights in Aotearoa New

- In 2017, the High Court of the State of Uttarakhand in India declared that the Rivers Ganga and Yamuna, all their tributaries, streams, every natural water flowing continuously or intermittently in these rivers, are declared as juristic/legal persons/living entities having the status of a legal person with all corresponding rights, duties and liabilities of a living person in order to preserve and conserve river Ganga and Yamuna.
- In 2016 in Colombia, the Constitutional Court recognised that the Atrato River (together with its basin and tributaries) is an entity 'sujeto de derechos' (a subject of rights). The river's rights (distinct from the human communities' rights) are to protection, conservation, maintenance and restoration by the state and ethnic communities. The Court made a number of orders to implement its decision, including that the rights of the river will be represented by a guardian – with one representative from Government and one from the claimant communities²⁷, referencing the Te Awa Tupua (Whanganui River) model from New Zealand.

What are the Rights of Nature?

The Declaration recognises in Article 2(1) that members of the Earth community have the following rights, among others:

- the right to life and to exist (Article 2(1)(a));
- the right to wellbeing (Article 2(3));
- the right to a place and to play its role in Mother Earth for her harmonious functioning (Article 2(2));
- the right to continue their vital cycles and processes free from human disruptions (Article 2(1)(c));
- the right to integral health (Article 2(1)(g));
- the right to be free from contamination, pollution and toxic or radioactive waste (Article 2(1)(h)); and
- the right to full and prompt restoration for the violation of the rights recognised in this Declaration caused by human activities (Article 2(1)(j)).

Furthermore, the Declaration recognises that in order to guarantee human rights, it is necessary to recognise and defend the rights of Mother Earth and all beings in her, because we are all part of Mother Earth - an indivisible, living community of interrelated beings.

It is important to understand that humans do not 'give' inherent rights to nature. As with fundamental human rights, nature's rights exist because nature exists. Currently our legal

Zealand: Protecting the Cosmology that Protects the Environment, *Widener Law Journal*, Vol. 21:273. Retrieved from <http://widenerlawreview.org/files/2008/10/15-Magallanes.pdf>.

²⁷ Original Rio Atrato judgment in Spanish, retrieved from: <http://cr00.epimg.net/descargables/2017/05/02/14037e7b5712106cd88b687525dfef4b.pdf>; English translation of judgment retrieved from: <https://justiciaambientalcolombia.org/2017/05/07/sentencia-rio-atrato/>.

systems ignore these fundamental rights – a situation that continues at our peril. In expanding our thinking about these fundamental rights, one suggested approach is to think in terms of ‘co-violations’, meaning where government, industry, or other actors violate both human rights and nature’s rights with the same action.²⁸ As former Director of the Earth Law Center in the US said, “Across the globe, we injure both people and ecosystems by treating the natural world as property to fuel mythically infinite economic growth. These injuries increasingly represent simultaneous violations, or ‘co-violations,’ of human rights and nature’s rights. We must reverse this trend by evolving our laws and courts to recognize that our well-being is inextricably linked with the Earth’s.”²⁹

Factual Evidence – Specific Rights of Nature Violated by UOGE

Extensive evidence is set out in [Appendix 1](#) to this submission, showing the impacts of UOGE on the natural world. This evidence, although not exhaustive, makes it very clear that UOGE consistently, and by the essential nature of its practices, violates the rights of nature.

In summary, the evidence demonstrates the following:

a. Violation of the rights of rivers, aquifers and waterways

The evidence shows that the fundamental rights of rivers, aquifers and waterways have been violated in N. America, Australia and other jurisdictions. Examples of this evidence includes:

- Massive amounts of fresh water are used in the tar sands industry in Canada and elsewhere. For example, in 2011 alone, companies mining the tar sands siphoned approximately 370 million cubic meters of water from the Athabasca River alone.³⁰
- The fresh water used in tar sands extraction is either heated or converted to steam in order to separate the viscous oil or bitumen from sand formations. After use, the water is toxic, however it is not cleaned before it is either pumped into underground aquifers or tailings ponds. The tailing ponds now cover 251 square kilometres (97 square miles) of territory in Northern Alberta and contain 340 billion gallons of toxic sludge. Full clean up costs of this waste is estimated at US\$22 billion, which may end up falling on taxpayers³¹. The timing and sheer scale of the water use is drying up wetlands, disrupting water flows, and potentially threatening riparian habitats thousands of miles downstream along the Mackenzie River basin.³²

²⁸ For an expansion of the concept of co-violations, see Earth Law Center’s 2015 report, *Fighting for our Shared Future: Protecting Both Human Rights and Nature’s Rights*. Retrieved from: <https://therightsofnature.org/fighting-shared-future/>.

²⁹ Quote of Linda Sheehan retrieved from <https://therightsofnature.org/fighting-shared-future/>

³⁰ YaleEnvironment360 report (5 August 2013) *With Tar Sands Development, Growing Concern on Water Use*. Retrieved from:

https://e360.yale.edu/features/with_tar_sands_development_growing_concern_on_water_use.

³¹ Financial Post report (16 Jan 2018) *Oilsands ponds full of 340 billion gallons of toxic sludge spur fears of environmental catastrophe*. Retrieved from: <http://business.financialpost.com/commodities/energy/340-billion-gallons-of-sludge-spur-environmental-fears-in-canada>.

³² Rosenberg International Forum on Water Policy report (2013), *Potentially ‘catastrophic’ changes underway in Canada’s northern Mackenzie River Basin*. Retrieved from: <https://phys.org/news/2013-06-potentially-catastrophic-underway-canada-northern.html>.

- Pollution of aquifers by toxic chemicals in a range of communities in Australia, the United States and Romania. This includes fresh water drawn from underground bores bubbling with methane gas in Queensland, and methane found in 42 water wells in Denver-Julesburg Basin from gas well failures.
- Severe pollution of rivers by gases and chemicals, to the extent that in Australia, the Condamine River and other connected water systems have caught fire due to gas bubbling up in the river. Having a river **catch fire** due to gas leaking into the water system is a devastating violation of the right of the river and all of the life it supports.

Based on the Declaration, and the laws in New Zealand, India and Colombia relating to the rights of rivers to flow, to be healthy, to support life and continue their evolutionary journey, UOGE violates the following rights of rivers, waterways and biodiversity within water and waterways:

- the right to continue their vital cycles and processes free from human disruptions (Article 2(1)(c));
- the right to integral health (Article 2(1)(g));
- the right to be free from contamination, pollution and toxic or radioactive waste (Article 2(1)(h)).

b. Violation of the rights of the climate system

The evidence shows that the fundamental right of the planet's atmosphere and climate system to remain unpolluted, remain stable and support life on Earth, is being violated. UOGE releases methane and other gases into the atmosphere and contributes to life threatening, human-induced climate change.

During oil sands extraction, methane gas originating within the mined material may be released into the atmosphere during mining, transport and preparation of oil sands ore and bitumen extraction from the ore. Methane is a far more potent greenhouse gas than carbon dioxide. Recent research shows that the level of methane being emitted into the atmosphere in Alberta as a result of oil sands extraction is far worse than originally thought.³³

In 2015-16, the largest methane gas leak in US history took place at the Aliso Canyon underground natural gas storage facility in California. The leak released over 100,000 metric tons of methane into the atmosphere over a 4-month period. The 3,600 acre underground natural gas storage facility contained gas piped from as far away as Texas and the Midwest,

³³ Johnson, M.R, et al (2017) Comparisons of Airborne Measurements and Industry Estimates of Methane Emissions in the Alberta Upstream Oil and Gas Sector, *Environ. Sci. Technol.*, **2017**, 51 (21), pp 13008–13017. Retrieved from: <https://pubs.acs.org/doi/full/10.1021/acs.est.7b03525>. See also The Guardian news report, retrieved from: <https://www.theguardian.com/world/2017/oct/17/study-methane-emissions-from-alberta-oil-and-gas-wells-are-worse-than-thought>.

serving 14 power plants and more than 20 energy customers. 8,300 households were evacuated at a cost of US\$500 million.³⁴

As mentioned above, methane leaks from unconventional oil and gas operations in the US are higher than previously estimated, as documented by the new federal inventory of greenhouse gases. Total US methane emissions have also increased by more than 30 per cent between 2002 and 2014.³⁵

Based on the Rights of Nature as articulated in the Declaration, the gases released by UOGE violate the following atmospheric rights of nature:

- the right to integral health (Article 2(1)(g));
- the right to be free from contamination, pollution and toxic or radioactive waste (Article 2(1)(h)).

c. Violation of the rights of land and sub-surface to overall wellbeing and integral health

Before oil sands extraction can take place, vast amounts of trees and topsoil have to be removed. This is an obvious and direct violation of the rights of the land and sub-surface to overall wellbeing and integral health. Another dramatic and immediate threat from UOGE to the living world is the industry's causation of earthquakes and seismic activity. These are often caused by the wastewater that remains after drilling activities being injected underground at high pressure. Wastewater may contain chemicals, heavy metals and radioactive materials. Evidence of impacts include:

- Between 2000 and 2012, forest loss in the Alberta tar sands region amounted to 5.5 per cent of total land area (14 million hectares), surpassing forest loss in Russia (2.2 per cent), the United States (2.9 per cent), Brazil (4.3 per cent) and Canada as a whole (3.1 per cent). In the surface mineable area of the tar sands region (a 475,000 hectare area where developers clear all vegetation from the land in order to extract bitumen) forest loss reached 20 per cent.³⁶

³⁴ Concerned Health Professionals of New York & Physicians for Social Responsibility (2016, November 17). *Compendium of scientific, medical, and media findings demonstrating risks and harms of fracking (unconventional gas and oil extraction)* (4th ed.). Retrieved from: <http://concernedhealthny.org/compendium/p3-4>, 169-176; Conley, S., Franco, G., Faloona, I., Blake, D. R., Peischl, J. & Ryerson, T. B. (2016). Methane emissions from the 2015 Aliso Canyon blowout in Los Angeles, CA. *Science*. Advance online publication. doi: 10.1126/science.aaf2348.

³⁵ *Compendium*, above no 29, p3.

³⁶ World Resources Report (15 July 2014), Petersen R., Sizer, N. and Lee, P. Retrieved from: <http://www.wri.org/blog/2014/07/tar-sands-threaten-world%E2%80%99s-largest-boreal-forest>.

- In 2006 mud began erupting from the ground in volcano-like fashion in an urban area of Java, Indonesia. As at 2015, the Lusi mudflow had caused 39,700 people to be displaced and nearly \$3 billion in damages and disaster management. A study in 2015 concluded that the likely cause was nearby gas drilling which forced fluid into a clay layer via the open well.³⁷
- A Study of a swarm of earthquakes in California’s Central Valley in 2005 concluded that underground injection of wastewater from oil drilling operations had contributed to seismicity via changes in localised pressures along an active fault.³⁸
- Causality for a 5.3 magnitude earthquake in Colorado in 2011 has been ascribed to wastewater injection wells from coal-bed methane production. As at 2014, it was the second largest earthquake for which there was clear evidence that the earthquake sequence was induced by fluid injection.³⁹
- In Lancashire, England, in 2011, an independent report commissioned by hydraulic fracturing company, Cuadrilla, concluded that earthquakes that occurred close to Cuadrilla’s test drilling site were most likely caused by “direct injection of fluid into the fault zone”. The earthquakes were magnitude 2.3 and 1.5 plus 48 smaller quakes⁴⁰.

Drawing on the rights set out in 2(1) of the Declaration, these earthquakes and seismic activity directly interfere with:

- the right to wellbeing (Article 2(3));
- the right to a place and to play its role in Mother Earth for her harmonious functioning (Article 2(2));
- the right to continue their vital cycles and processes free from human disruptions (Article 2(1)(c));
- the right to integral health (Article 2(1)(g)); and
- the right to be free from contamination, pollution and toxic or radioactive waste (Article 2(1)(h)).

The concept of ‘integral health’ in the Declaration reminds us of the essential interrelatedness of every aspect of the Earth community and that the health of the whole system affects the health of any aspect or being within it, and *vice versa*. This understanding

³⁷ Tingay, M. R. P., Rudolph, M. L., Manga, M., Davies, R. J., & Wang, C-Y. (2015). Initiation of the Lusi mudflow disaster. *Nature Geoscience*, 8. doi:10.1038/ngeo2472.

³⁸ Goebel, T. H. W., Hosseini, S. M., Cappa, F., Hauksson, E., Ampuero, J. P., Aminzadeh, F. & Saleeby J. B. (2016). Wastewater disposal and earthquake swarm activity at the southern end of the Central Valley, California. *Geophysical Research Letters*, 43. doi: 10.1002/2015GL066948.

³⁹ Rubinstein, J. L., Ellsworth, W. L., McGarr, A. & Benz, H. M. (2014). The 2001-present induced earthquake sequence in the Raton Basin of Northern New Mexico and Southern Colorado [abstract]. *Bulletin of the Seismological Society of America*. Retrieved from: <http://www.bssaonline.org/content/104/5/2162.abstract?stoc>.

⁴⁰ Synthesis Report by Dr. C.J. de Pater and Dr. S. Baisch. (2011). *Geomechanical Study of Bowland Shale Seismicity*. Retrieved from: http://energyspeakswv.com/Resources/Docs/Studies/Final_Report_Bowland_Seismicity_02-11-11.pdf.

is also reflected in Article 1, which states that 'Each being is defined by its relationships as an integral part of Mother Earth' (Article 1(3)). In this case it is clear that earthquakes and seismic activity disrupt the capacity of nature to provide a stable, safe place for life to exist, thrive and flourish.

d. Violation of the rights of animals and plants to exist, thrive and evolve

The evidence shows that the fundamental rights of native plants and animals to exist, thrive and evolve are violated by UOGE. The rights of livestock animals are also violated.

Examples of this evidence includes:

- In 2008, 1,600 ducks died in a Syncrude Canada Ltd tailing pond in the Athabasca tar sands, resulting in a C\$3 million penalty for the company.⁴¹ In 2010, around 550 migratory ducks died or had to be euthanized after having to land during freezing rain and high winds in tailings ponds containing toxic bitumen.⁴²
- In Queensland, Australia, one GLNG⁴³ gas field alone will directly and indirectly affect thousands of square kilometres of suitable habitat for all five of Australia's lizard families, four of the six snake families who are represented in the highly fragmented bioregion and several that are regarded as regional endemics (i.e. they only reside in the Southern Brigalow Belt).⁴⁴
- In the USA, a study examined 24 cases in six states where animals and owners were potentially affected by gas drilling. In one instance a farmer put 60 cattle in a field with access to a contaminated creek, resulting in 21 cattle dying and 16 failing to reproduce, whereas the other cattle with no access to the creek reported no adverse effects. In another case, of 140 cattle exposed to fracking wastewater approximately 70 died, and there was a high incidence of stillborn and stunted calves in the remaining cattle.⁴⁵

Governments Banning UOGE Activities

In light of the above evidence, it is unsurprising that growing number of countries have either banned certain kinds of UOGE activities in their territories, or declared a moratorium on

⁴¹ Reuters report (26 June 2010) Syncrude guilty of 1600 duck deaths in toxic pond. Retrieved from: <https://www.reuters.com/article/us-syncrude-ducks/syncrude-guilty-in-1600-duck-deaths-in-toxic-pond-idUSTRE65O68520100625>.

⁴² National Post Report (4 October 2012). Oil sands death of hundreds of ducks in 2010 blamed on weather. Retrieved from: <http://nationalpost.com/news/canada/oil-sands-death-of-hundreds-of-ducks-in-2010-blamed-on-weather-no-charges-laid>.

⁴³ GLNG stands for Gladstone Liquefied Natural Gas, a liquefied natural gas plant in Queensland, Australia.

⁴⁴ Santos GLNG (2016) 'Santos GLNG Significant Species Management Plan' – GFD Project Document Number: 0007-650-PLA-0006. See also 'Santos GLNG Gas Fields Development Project Stage 1 Offset Plan 2016 – 2021', Document Number: 0007-650-PLA-0008.

⁴⁵ *Compendium*, above no 29, p135; Ramanujan, K. (2012, March 7). Study suggests fracking is killing farm animals, pets. Cornell Chronicle. Retrieved from <http://www.news.cornell.edu/stories/2012/03/reproductive-problems-death-animals-exposed-fracking>.

UOGE, until its safety is demonstrated. In spite of the abundance of shale gas under many parts of Europe, France, the Netherlands, Scotland, Ireland, Wales, Denmark, and Bulgaria have effectively banned hydraulic fracturing, as do the US states of New York, Maryland and Vermont and the Australian State of Victoria. In [Appendix 2](#) to this submission, we provide further information in relation to countries and states that have either banned or placed a moratorium on UOGE in recent years.

Responsibility and Liability

a. Governments primarily responsible, for permitting exploration and extraction

Governments and public institutions, and the people who work in them bear a particular responsibility to act and must meet a higher standard by virtue of the regulatory powers and responsibilities vested in them. For example, the Declaration requires that states and public institutions must:

- (a) establish and apply effective norms and laws for the defence, protection and conservation of the rights of Mother Earth (Article 3(2)(e));
- (b) guarantee that the damages caused by human violations of the inherent rights recognised in this Declaration are rectified and that those responsible are held accountable for restoring the integrity and health of Mother Earth (Article 3(2)(g));
- (c) empower human beings and institutions to defend the rights of Mother Earth and of all beings (Article 3(2)(h)); and
- (d) establish precautionary and restrictive measures to prevent human activities from causing species extinction, the destruction of ecosystems or the disruption of ecological cycles (Article 3(2)(i)).

The evidence placed before the Tribunal indicates that there has been a catastrophic failure on the part of governments in those nations who have allowed UOGE to take place in their jurisdictions.

The Australian Federal Government and the Government of Queensland must take the necessary action to comply with the duties set out in the Declaration in relation to the rights of nature in Queensland.

The US Federal Government and various US State Governments, and the Government of Canada and various Canadian Provincial Governments, must take the necessary action to comply with the duties set out in the Declaration in relation to the rights of nature throughout North America.

All other states that have allowed UOGE to take place in their territories must take the necessary action to comply with the duties set out in the Declaration in relation to the rights of nature in their jurisdiction.

b. Accountability of companies carrying out exploration and extraction activities, of banks funding the projects and of other private sector organisations

The Declaration recognises that, among other obligations, human beings, all States, and all public and private institutions must:

- (a) act in accordance with the rights and obligations recognised in the Declaration (Article 3(2)(a));
- (b) ensure that the pursuit of human wellbeing contributes to the wellbeing of Mother Earth, now and in the future (Article 3(2)(d)) ;
- (c) establish precautionary and restrictive measures to prevent human activities from causing species extinction, the destruction of ecosystems or the disruption of ecological cycles (Article 3(2)(i));
- (d) recognize and promote the full implementation and enforcement of the rights and obligations recognised in the Declaration (Article 3(2)(b)).

These duties must rest particularly heavily upon those organisations that intentionally promote increased extraction and combustion of fossil fuels, including by funding these activities. The fact that these activities undermine rather than contribute to, the wellbeing of Mother Earth, renders them illegitimate and unlawful. In fact, from the perspective of the Earth community as a whole, the continuation of such activities is profoundly anti-social and must cease.

c. Accountability of individuals

The Declaration records that ‘Every human being is responsible for respecting and living in harmony with Mother Earth’ (Article 3(1)). Consequently everyone has a responsibility to ensure that they do not contribute to climate change and thereby to the warming and acidification of the oceans.

The responsibilities of the people who invest in, fund, promote, manage or undertake these harmful activities is not lessened by the legal fiction that these anti-social activities are carried out by a juristic person such as a company. Each human being is responsible for the consequences of their actions – particularly when they are foreseeable.

Although there is some merit in the argument that responsibility must also be borne by everyone who uses the energy generated by the UOGE, their responsibility as end users is less than those directly involved in the harmful activities, or those holding the power to regulate and prevent the harm.

Restorative measures

The Declaration sets out that nature has the right to full and prompt restoration for the violation of the rights recognised in this Declaration caused by human activities (Article 2(1)(j)).

We ask the Tribunal to declare a range of restorative measures:

- (a) to note the devastating impacts of UOGE on the natural world, in all the jurisdictions where it takes place;
- (b) to call for a cessation of all UOGE immediately, and a worldwide ban on the industry;
- (c) to call for full and prompt restoration for the violation of the rights recognised in the Declaration caused by human activities (Article 2(1)(j)); and
- (d) to order that governments and corporations in all affected jurisdictions, create a special fund which communities can use to, wherever possible, restore the natural world to the condition that it was in before the industry's actions took place.

Conclusions

Based on the foregoing, we assert that continuing to treat our home planet merely as a vast warehouse of resources for human use, or as a repository for the huge amounts of toxic waste that we generate, is fundamentally wrong, and incompatible with continued life on Earth.

As former Director of the Center for Earth Jurisprudence in the USA stated at the 2016 World Conservation Congress "Our current laws embody a flawed and misguided anthropocentric worldview. Our laws now place humanity apart from and ahead of nature, rather than as an integral part of the greater whole. Earth Jurisprudence principles would balance human interests with the rights of ecosystems to exist, continue, and regenerate, and with the rights of current and future generations to live on a healthy, thriving planet."⁴⁶

Our hope is that this Tribunal will acknowledge the inherent wisdom in recognising in law the intrinsic rights of nature and of ecosystems to exist, to thrive, to regenerate and to evolve, thus adding to the growing conviction that such a fundamental, systemic change may be the only thing that can save us in our darkest hour.

⁴⁶ Quote of Traci Deen retrieved from <http://www.earthjurist.org/news/2016/8/31/cej-attends-the-iucn-congress>