

The Ecological Citizen

Vol 4 No 2 2021

ISSN 2515-1967

A peer-reviewed journal

www.ecologicalcitizen.net

CONFRONTING HUMAN SUPREMACY IN DEFENCE OF THE EARTH

IN THIS ISSUE

A suite of articles
focus on animal
conservation



AN INDEPENDENT JOURNAL

No article access fees | No publication charges | No financial affiliations

**Cover photo**

An American red squirrel (*Tamiasciurus hudsonicus*) in Canada

Ian Whyte

The Ecological Citizen

An ecocentric, peer-reviewed,
free-to-access journal

ISSN 2515-1967

Aims

- 1 Advancing ecological knowledge
- 2 Championing Earth-centred action
- 3 Inspiring ecocentric citizenship
- 4 Promoting ecocentrism in political debates
- 5 Nurturing an ecocentric lexicon

Content alerts

Sign up for alerts at:

www.ecologicalcitizen.net/#signup

Social media

Follow the Journal on Twitter:

www.twitter.com/EcolCitizen

Like the Journal on Facebook:

www.facebook.com/TheEcologicalCitizen

Editorial opinions

Opinions expressed in the Journal do not necessarily reflect those of each member of the Editorial Board.

Advertising

No money is received for the placement of advertisements in the Journal.

Finances

The Journal is run with minimal costs by a staff of volunteers. The small costs that do exist are covered by small, unrestricted, private donations. There are no charges for publication and no fees to access any of the content.

Copyright

The copyright of the content belongs to the authors, artists and photographers, unless otherwise stated. However, there is no limit on printing or distribution of PDFs downloaded from the website.

Translations

We invite individuals wishing to translate pieces into other languages, helping enable the Journal to reach a wider audience, to contact us at: www.ecologicalcitizen.net/contact.html.

A note on terminology

Because of the extent to which some non-ecocentric terms are embedded in the English language, it is sometimes necessary for a sentence to deviate from a perfectly ecocentric grounding. The 'natural world' and 'environment', for instance, both split humans from the rest of nature but in some cases are very difficult to avoid without creating overly complex phrases. For usage notes relating to terms such as these, when they appear in the Journal, along with other language considerations, please visit: www.ecologicalcitizen.net/lexicon.html.

Typesetting

The Journal is typeset in **Merriweather** and **Merriweather Sans**, both of which are typefaces with an Open Font Licence that have been designed by Eben Sorkin.

“Unless the new forms of community
extend beyond the traditional humanistic
bounds to include the community of
Nature, the game is up.”

Stan Rowe

The Ecological Citizen | Vol 4 No 2 2021

Editorial

- Suffer the animals **101**
Eileen Crist

Opinions

- Tigers: Wild and commodified **103**
Debbie Banks
- #STOPEATINGWILDLIFE: Reducing urban wildlife consumption in Cambodia **105**
Oliver Roberts and Andy Ball
- Say My Name and I Will Tell You My Story* **107**
Evgenia Emets
- Eco-social justice in an anthropocentric world **111**
Nicci Attfield and James Reed
- A small farm future **118**
Chris Smaje
- Symptoiethics: *For the Love of a Field* **121**
Miche Fabre Lewin and Flora Gathorne-Hardy

Reflections

- Beavers are still facing an uncertain future in Scotland **123**
Alan Watson Featherstone

Long articles

- Understanding and solving the South-East Asian snaring crisis **129**
Thomas NE Gray, Michael Belecky, Hannah J O'Kelly, Madhu Rao, Oliver Roberts, Andrew Tilker, Mia Signs and K Yoganand
- Born free or life behind bars: The subtleties of African large carnivore conservation **143**
Tarik Bodasing
- The post-COVID landscape: A chance to end the use of threatened wild animals in traditional Chinese medicine? **153**
Aron White
- Sounding out other species **159**
Melanie Challenger

Experiencing nature

- Twelve acres **165**
Christine Cook Mania

Poetry section

- Works by Alfred de Vigny, Ryota Oshima, Issa, Rabindranath Tagore, Galway Kinnell, Jorge Carrera Andrade, Jess Woolford, Greg Mikkelsen, Briana Gonzalez, Mark Goodwin, Sue Bayliss and Daniel Hudon **171**
Selected by Victor Postnikov

Featured artists

This issue also features artworks by Aaron Vincent Elkaim, Amy Livingstone, Andreas Scholz, Evgenia Emets, and Gail Ashton.

Editor-in-Chief

Patrick Curry

Writer and Scholar
London, UK

Associate Editors

Eileen Crist

Writer and Teacher
Blacksburg, VA, USA

Adam Dickerson

Writer and Gardener
Gundaroo, NSW, Australia

Joe Gray

Field Naturalist and Eco-activist
St Albans, UK

Ian Whyte

Field Naturalist
Ottawa, ON, Canada

Art Editor

Stephanie Moran

Artist and Librarian
London, UK

Poetry Editor

Victor Postnikov

Poet, Essayist and Translator
Kiev, Ukraine

Honorary Consulting Editor

Ted Mosquin

Naturalist
Lanark, ON, Canada

Art Advisor

Salomón Bazbaz Lapidus

Director – Cumbre Tajín Festival
Papantla de Olarte, Mexico

Editorial Advisors

David Abram

Cultural Ecologist and
Geophilosopher
Upper Rio Grande Valley, NM, USA

Melinda Alfano

Graduate in Water Resources
New York, NY, USA

Oussou Lio Appolinaire

Practitioner of Earth Jurisprudence
Avrankou, Benin

María Valeria Berros

Researcher in Rights of Nature
Santa Fe, Argentina

David Blackwell

Educator and Nature-lover
Halifax, NS, Canada

Susana Borràs Pentinat

Lecturer in Public International Law
Tarragona, Spain

Tom Butler

Writer and Activist
Huntington, VT, USA

Nigel Cooper

Chaplain and Biologist
Cambridge, UK

Kaitlyn Creasy

Assistant Professor of Philosophy
San Bernardino, CA, USA

Paul Cryer

Conservationist
Hillcrest, South Africa

Cormac Cullinan

Environmental Attorney and Author
Cape Town, South Africa

John Davis

Wildways Trekker
Westport, NY, USA

Alan Watson Featherstone

Founder and Visionary – Trees for Life
Findhorn, UK

Anne Fremaux

Ecological Philosopher
Grenoble, France

Sandy Irvine

Political Activist
Newcastle-upon-Tyne, UK

Mumta Ito

Lawyer, Zoologist and
Founder – Nature's Rights
Forres, UK

Marjolein Kok

Environmental Activist and Researcher
Utrecht, the Netherlands

Helen Kopnina

Environmental Anthropologist
Leiden, the Netherlands

Joseph Lambert

Researcher in Earth Jurisprudence
Brighton, UK

Sandra Lubarsky

Scholar in Sustainability
Flagstaff, AZ, USA

Michelle Maloney

Lawyer and National
Convenor of AELA
Brisbane, QLD, Australia

Alexandra Marcelino

Jurist in Environmental Law
Lisbon, Portugal

Maria Carolina Negrini

Lawyer
São Paulo, Brazil

Vanja Palmers

Buddhist Teacher promoting Animal Rights
Lucerne, Switzerland

Alessandro Pelizzon

Researcher in Earth-Centred Law
Lismore, NSW, Australia

John J Piccolo

Associate Professor in
Environmental and Life Sciences
Karlstad, Sweden

Coyote Alberto Ruz Buenfil

Environmental and Social Activist
Huehucoyotl Ecovillage,
Mexico

Vandana Shiva

Scholar and Environmental Activist
Delhi, India

Steve Szeghi

Professor of Economics
Wilmington, OH, USA

Bron Taylor

Professor of Religion, Nature
and Environmental Ethics
Gainesville, FL, USA

Andrew Walton

Bioregionalist
Birmingham, UK

Haydn Washington

Environmental Scientist and Activist
Sydney, NSW, Australia

Rachel Waters

Academic and
Advocacy Journalist
Brooklyn, NY, USA

Fiona Wilton

Programme Coordinator
– Gaia Foundation
Colombia/Uruguay

Doug Woodard

Environmentalist
St Catharines, ON, Canada

George Wuerthner

Photographer, Author and Activist
Bend, OR, USA

Peter Jingcheng Xu

Researcher in Literature
Beijing, China

Mersha Yilma

Practitioner of Earth Jurisprudence
Addis Ababa, Ethiopia

Suzanne York

Director – Transition Earth
San Francisco, CA, USA

Suffer the animals

“The greatness of a nation and its moral progress can be judged by the way its animals are treated.”

Attributed to Mahatma Gandhi

The articles in this semi-themed ‘Animals’ issue convey a sliver of the suffering, death, and extinction that plague animals. Their plight speaks to the rupture and alienation of much of humanity from Earth’s community of life. To paraphrase Gandhi, the baseness of global civilization and its moral decay are evident in the downfall of animals in our time.

In witnessing the violence against animals, we are compelled to part ways with the platitude that our broken relationship with nature can be roundly gauged by our carbon footprint. The enclosed images of snared animals in South-East Asia’s forests, for instance, expose that at a deeper level the ecological crisis is entangled with something akin to ‘soul loss’ in the human condition. That loss is exhibited in the unnerving widespread brutality that is perpetrated, and tolerated, toward animals. It is also evident in certain ‘solutions’ people conjure for ecological dilemmas. One example is the grotesqueness of breeding tigers in captivity and slaughtering them for their body parts, as a plan for ‘saving tigers’ in the wild. Another example is rationalizing trophy hunting (to indulge rich people’s sick thrills), as a strategy for funding ‘carnivore conservation.’ How many petty mind-games can human supremacy spin in its scramble to camouflage its viciousness?

For years, academics (and others) debated the merits and demerits of the wilderness idea. Getting lost in heady thinking can be a surefire way to lose touch with the factual.

More than idea, wilderness is *reality*: the place, among other important things, where the wild things or wild animals live. Defenders of wilderness have always simply pled: Leave wild places and beings alone. Stop shooting wild animals, snaring them, culling them, commodifying them, eating them, managing them, turning them into refugees, and stealing their homes. Just stop.

The global poaching (bushmeat) crisis is emptying Earth of the exquisite being and creative presence of animals. This crisis is about heart-wrenching cruelty and human blindness in inflicting it. It is also about the hallucination that eating ‘wild meat’ displays status and confers strength. Yet censure reaches beyond the poacher–criminal syndicate–consumer nexus. The poaching crisis incriminates global civilization for failing to prevent this disaster, prosecute perpetrators, institute legislation with teeth, enforce meaningful punishments, generously staff and support Earth keepers (like rangers), and educate the public about the sourcing of wild meat and the perils of wet markets. A civilization that contemplates colonizing Mars but remains impotent before the bloodbath of animals is damaged in ways that run dark and deep.

Even as population naysayers continue denying the repercussions of over-population, Africa’s animals are spiraling into endangerment and extinction. Yet inapt political tactfulness – given that high fertility rates in sub-Saharan Africa and elsewhere are largely due to oppressive patriarchal norms (see Engleman [2016]) – turns a blind eye to the ruins that rapid human population growth contributes. As Tarik Bodasing explains herein, Africa’s large carnivores are losing homes and lives. Ninety percent of cheetahs’ historic range is

Eileen Crist

About the author

Eileen has been teaching at Virginia Tech in the Department of Science and Technology in Society since 1997. She has written and co-edited numerous papers and books, with her work focusing on biodiversity loss and destruction of wild places, along with pathways to halt these trends. Eileen lives in Blacksburg, VA, USA.

Citation

Crist E (2021) Suffer the animals. *The Ecological Citizen* 4: 101–2.

Keywords

Animal ethics;
human supremacy

gone. Trends are becoming similar for lions, leopards, and wild dogs, as well as for Africa's herbivores like elephants and giraffes. Beyond Africa, most big wild animals are in trouble: they need large-scale geographical space, which humans are taking, and they are being slayed, to boot.

As ecocentrics, we often find ourselves rehearsing the argument that non-human beings, and the places they inhabit and co-create, have value in themselves (*intrinsic value*). That is, they have majesty, dignity, intelligence, agency, meaning, vitality, lives-to-live and things-to-do in themselves. It is sad that any of this needs to be stated. Why is humanity failing to recognize that Earth takeover is deathly wrong?

Livestock numbers keep climbing, tracking growing human numbers and *per capita* wealth. The latter two trends are damaging enough – driving ecological drawdown and pollution – yet their *product*, which is fueling more carnivory and animal-product consumption, makes everything worse. By everything, I mean killing wild animals, occupying habitats (for grazing and feed), overdrawing freshwater, spewing greenhouse gases, felling forests, unleashing pesticides, fertilizers, and toxic manure, and emptying the seas. I also mean rising rates of heart disease, cancer, zoonoses and obesity – a bill of ill health that will help bring global society, sooner or later, to its knees. Additionally, I mean the unconscionable treatment of animals in factory farms to ramp up and cheapen disease-causing products, thus sponsoring disproportionate morbidity and mortality among the underprivileged. From those who do not have it shall be taken – but ultimately it shall be taken from all.

Overall, we pay little respect to nature, implement 'solutions' as unethical as the problems, devalue wilderness, mute root causes, overeat animal products, kill and extinguish wild animals, overbreed and abuse farm animals, and keep championing 'traditional medicine' as if it has not become inveterately toxic in a world of beleaguered life. Yet we must simultaneously acknowledge the commitment of millions of people to heal Earth and our relations with non-humans and one another. We can remember with gratitude the rangers who have died in the line of duty, most murdered by poachers – over 1000 people in the past decade (Global Conservation, 2018). We may thank the efforts of countless environmental artists to awaken our senses to both despoliation and beauty, through works such as "Seasick" and "Reciprocity Mandala" in this issue. We can salute the scientist-activists exposing crimes against the planet and offering genuine solutions.

We are not only fighting for Earth and for survival. We are fighting for the wholeness of the human soul. Shamans

of diverse cultural traditions have regarded 'soul loss' as occurring when some part of our being takes flight through severe trauma or shock.¹ That ruptured part becomes the 'shadow.' As humanity broke covenant and assumed lordship over Earth, we lost friendship with animals and contact with our animal being. That soul loss underwrites the mass killing and torturing of animals, as well as the collective dissociation from such transgressions. It is as though the human shadow is seeking to erase what we ourselves have lost.

Calling the lost fragment of our soul back begins by listening to animals. They have so much to teach us. It begins also by returning to our animal bodies and selves. These realignments will bring us back to our senses, literally and figuratively. Listening to animals, we revive the admiration and esteem we spontaneously feel for them. Wild animals glisten with raw vitality and intelligence. Barry Lopez (1998: 1) called that animal-shine "numinous". Wild animals, he wrote, "riveted my imagination," for they "seemed to tremble in the aura of their own light." "Holding their gaze" (if we have such fortune), we see "the intensity and clarity [...] associated with the presence of a soul." In the eyes of domesticated animals – who are also numinous if more homely – we see the vulnerability of creatures who depend on us completely. They deserve only our care. Looking at our own animal selves in the mirror, among other things we might note the conspicuous absence of fangs and claws. Therefore, let's put the meat aside or indulge it infrequently.

If we admit how deeply we love animals, including ourselves, and call our animal soul home, many things will fall into place. ■

Notes

- 1 For contemporary renderings of ancient shamanic views about soul loss and soul retrieval, see for example Wangyal (2002) and Ingerman (2011).

References

- Engleman R (2016) Africa's population will soar dangerously unless women are more empowered. *Scientific American*, 1 February. Available at <https://is.gd/Fdkron> (accessed May 2021).
- Global Conservation (2018) Over one thousand park rangers die in 10 years protecting our parks and wildlife. 1 August. Available at <https://is.gd/4EMktU> (accessed May 2021).
- Ingerman S (2011) *Soul Retrieval: Mending the fragmented self* (revised edition). HarperOne, San Francisco, CA, USA.
- Lopez B (1998) The language of animals. *Wild Earth*, Summer: 1–6.
- Wangyal T (2002) *Healing with Form, Energy and Light: The five elements in Tibetan shamanism, Tantra, and Dzogchen*. Snow Lion, Ithaca, NY, USA.

Tigers: Wild and commodified

The year 2020 was supposed to be a super year for biodiversity (United Nations Environment Programme, 2019). Instead, it has been a tragic reminder of just how far we have strayed from a sustainable life on this planet. We have created the global climate and biodiversity crises and now around a million species of plants and animals are at risk of extinction (Brondizio *et al.*, 2019).

The survival of the wild tiger is a barometer of how green our global recovery will be, and of how committed world leaders are to implementing the transformative changes required to prevent further global biodiversity collapse.

In 2010, there were an estimated 3200 wild tigers remaining across their Asian range, and despite a commitment by the leaders of Tiger Range Countries to double the wild tiger population by 2022 (World Bank, 2016), there are still fewer than 4000 wild tigers today.

Poaching of tigers for their body parts continues to be a primary driver of decline. Efforts to end demand for tiger parts and products – which are used for luxury ornamental purposes, medicines and trinkets – have been undermined by policies and weak enforcement that enable the use of captive bred, or ‘farmed’, tiger parts and products. Legal and illegal tiger farms have been allowed to flourish in Thailand, Laos, Vietnam and China. These farms range in scale of operation, from backyard enclosures with one or two tigers that are raised to maturity then slaughtered, to speed-breeding operations producing dozens, or even hundreds of cubs a year, often masquerading as ‘zoos’. Instead of phasing out tiger farms, as per a 2007 international agreement, there are now an estimated 8000 tigers in captivity across these “tiger-farming countries” (Environmental Investigation Agency, 2020).

Proponents of tiger farming claim that it will flood the market with a cheap alternative to wild tigers and thereby relieve pressure on the wild population. But the opposite has happened – and the empty tiger forests of Cambodia, Laos, and Vietnam are testimony to this failed experiment. Criminal networks continued to profit from poaching and trafficking of wild tigers, financed by a spiralling demand that has been stimulated by the accessibility and seeming acceptability of trade in captive-bred tiger parts.

This commodification of the tiger in south-east and east Asia is in stark contrast to the situation in south Asia, where there are pockets of wild tiger population recovery. These glimmers of hope are derived in part from an underlying precautionary principle approach with laws prohibiting trade and tiger farming, inter-agency cooperation on law enforcement, and collaboration between NGOs, civil society and government. However, the key source of this success is the extraordinary cultural ties to the tiger among communities that co-exist with the big cats in the wild.

If tiger farming and trade in tiger parts and products is symbolic of our toxic relationship with nature, then learning from indigenous peoples who place a higher value on tigers being alive and in the wild is the tigers’ best hope for survival, and should be our guide. ■

References

- Brondizio E, Settele J, Díaz S and Ngo H, eds (2019) *Global Assessment Report on Biodiversity and Ecosystem Services of the Intergovernmental Science–Policy Platform on Biodiversity and Ecosystem Services*. IPBES Secretariat, Bonn, Germany. Available at <https://is.gd/9LVvZn> (accessed February 2021).
- Environmental Investigation Agency (2020) *On the Butcher’s Block: The Mekong tiger trade trail*. Available at <https://is.gd/jINhJF> (accessed February 2021).

References continue in right-hand column

Debbie Banks

About the author

Debbie is Campaign Leader for Tigers and Wildlife Crime at the Environmental Investigation Agency (<https://eia-international.org/>) in the UK. She has an MSc in Conservation and is a recipient of the WWF Dr Rimington Award for Tiger Conservation.

Citation

Banks D (2021) Tigers: Wild and commodified. *The Ecological Citizen* 4: 103.

Keywords

Biodiversity; conservation; wildlife trade

United Nations Environment Programme (2019) 2020: A crunch year for the biodiversity and climate emergencies. Available at <https://is.gd/s4DGww> (accessed February 2021).

World Bank (2016) *The Global Tiger Initiative*. Available at <https://is.gd/b7Wfsf> (accessed February 2021).

What Kind of Ancestor *Do You Want to Be?*

**EDITED BY JOHN HAUSDOERFFER,
BROOKE PARRY HECHT, MELISSA K. NELSON,
AND KATHERINE KASSOUF CUMMINGS**

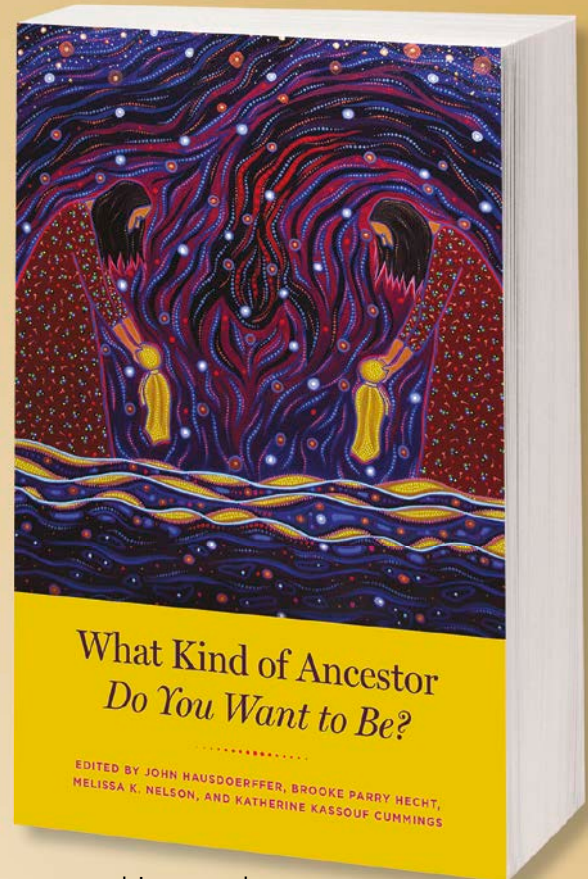
“Weaving poetry, narrative, interview, essay, and spirit, it is a unique, landmark tapestry. Utterly timely and profoundly urgent.”—Gregory Cajete, author of *Native Science*

Paper \$27.50

Published in Association with the



The University of Chicago Press www.press.uchicago.edu



Advertisement (placed at no charge)

**Are you concerned about the
burgeoning global population and
the mindless pursuit of growth in
Canada?**

**Then Population Institute Canada
is the organization for you!**



Since 1992, Population Institute Canada (PIC) has been promoting universal access to family planning, population stabilization, and gender equality. Smaller families mean more empowerment for women, more opportunities for girls to get an education, more per capita wealth, less unemployment, and less conflict over resources. A smaller human population would also benefit all other life on Earth. Half of the Earth's habitable land is already used for agriculture to feed the almost 8 billion members of our species, still growing by over 80 million each year.

Most developed countries already have a total fertility rate at or below replacement, but several, including Canada, are deliberately growing their populations through immigration. Stabilizing the populations of Canada and other high-consuming countries would reduce resource consumption and global greenhouse gas emissions.

Join PIC or support our work of promoting international family planning and a sustainable population for Canada – and all countries. To learn more, visit our website at www.populationinstituteCanada.ca.

#STOPEATINGWILDLIFE: Reducing urban wildlife consumption in Cambodia

In 2020 the world changed, in a story we all know too well. A mysterious virus originating in Wuhan, China – possibly from a wet market – was identified as a novel coronavirus, similar to the 2002–04 SARS epidemic which caused 774 deaths (World Health Organization, 2015). This new disease, SARS-CoV-2 (COVID-19), quickly overtook SARS in both cases and deaths, and spread rapidly around the globe. With the unprecedented emergence of this pandemic, the talk of the world quickly moved to how to prevent it from happening again. Many politicians and global leaders have discussed strategies for global health and disease prevention, but few have discussed the origins of this pandemic.

COVID-19 is a zoonosis, as are SARS, Ebola, MERS and HIV – a disease caused by a pathogen that has jumped from a non-human animal to a human. SARS and MERS are both coronaviruses that infected humans from bats, with civets and camels as a vector respectively (Yuan *et al.*, 2010; Xu *et al.*, 2004; World Health Organization, 2019). For years, as the illegal wildlife trade continues and natural places are deforested or destroyed for development, scientists have predicted that new zoonoses would emerge.

The poaching of wildlife for trafficking and human consumption is rarely sanitary. Wet markets, with many stressed, wounded and immunocompromised animals forced together, create the perfect conditions for the emergence and spread of novel diseases. COVID-19 was not a chance occurrence, but an inevitability of the wildlife trade.

Wildlife Alliance (www.wildlifealliance.org) has been working in Cambodia to counter the illegal wildlife trade since 2001,

through the use of the Wildlife Rapid Rescue Team, Asia's only full-time counter wildlife trafficking law enforcement unit. Whilst the trade is illegal, an underground black market is thriving. Many animals are poached from the forests using ecologically devastating snares, and then exported to China and Vietnam or consumed in country (Gray *et al.*, 2018).

As shown in a survey conducted by Fauna and Flora International (2018), a large proportion of wildlife consumers in the cities are the richer upper classes. Wild meat is believed to be healthier and to have traditional medicinal properties. It is largely consumed by adult men in social settings to show status, wealth and power.

The above considerations have inspired our #STOPEATINGWILDLIFE social media campaign. We have produced content and a campaign video in Khmer, to educate the urban Cambodian public of the dangers of eating wildlife meat and supporting the illegal wildlife trade. By using Khmer adverts, predominately on Facebook and targeted on urban centres, we can track engagement and modify our content accordingly. Facebook is almost synonymous with the internet in Cambodia, so it is the perfect medium to reach the widest audience. The campaign's goal is for more Cambodians to understand that not only are they increasing the risks of a new novel disease outbreak, but that the unsustainable trade is decimating the biodiversity of Cambodia's forests and pushing many species to the brink of extinction, robbing the country of its natural heritage. The common misconception that wildlife meat is healthy could not be further from the truth, and must be challenged. ■

For references, see next page

Oliver Roberts
and **Andy Ball**

About the authors

Oliver works for Wildlife Alliance, which protects forests and wildlife in the south-east Asian tropical belt (www.wildlifealliance.org).

Andy is a Cambodia-based freelance photographer and videographer with a specialty in covering environmental stories (www.andyballmedia.com).

Citation

Roberts O and Ball A (2021) #STOPEATINGWILDLIFE: Reducing urban wildlife consumption in Cambodia. *The Ecological Citizen* 4: 105–6.

Keywords

Biodiversity; conservation; wildlife trade

“The common misconception that wildlife meat is healthy could not be further from the truth, and must be challenged.”

References

- Fauna and Flora International (2018) *Exploring bushmeat consumption behaviors among Phnom Penh citizens*. Available at <https://is.gd/8jrfRw> (accessed February 2021).
- Gray T, Hughes A, Laurance W *et al.* (2018) The wildlife snaring crisis: an insidious and pervasive threat to biodiversity in Southeast Asia. *Biodiversity and Conservation* **27**: 1031–7.
- World Health Organization (2015) *Summary of probable SARS cases with onset of illness from 1 November 2002 to 31 July 2003*. Available at <https://is.gd/5K9hDH> (accessed February 2021).
- World Health Organization (2019) *Middle East respiratory syndrome coronavirus (MERS-CoV)*. Available at <https://is.gd/JuJhZt> (accessed February 2021).
- Xu R, He J, Evans M *et al.* (2004) Epidemiologic clues to SARS origin in China. *Emerging Infectious Diseases* **10**: 1030–7.
- Yuan J, Hon C, Li Y *et al.* (2010) Intraspecies diversity of SARS-like coronaviruses in *Rhinolophus sinicus* and its implications for the origin of SARS coronaviruses in humans. *Journal of General Virology* **91**: 1058–62.

Call for Artists

Stephanie Moran, Art Editor, and Salomón Bazbaz Lapidus, Art Advisor

We are inviting artists to submit artworks to *The Ecological Citizen*. We are seeking full-page spreads across 2–4 pages, single-page artworks and individual smaller drawings and images. We are looking for a range of artworks that fit with the ecocentric ethos of the Journal.

Artworks may relate to the Journal's topic areas (see www.ecologicalcitizen.net/about.html), or be images of animals and other nature including but not limited to: observational drawings, landscapes of all kinds, macro and cosmic perspectives, and animal vision.

We are also looking for artists to respond to written articles with smaller drawings; please contact the Art Editor, via the contact form linked to below, if you would be interested in making work specifically in response to submitted articles.

Artworks must be suitable to place in an online journal format, to fit onto A4 pages, and should be provided in high resolution (300 dpi) at intended size for the A4 page.

Contact us about making a submission: www.ecologicalcitizen.net/contact.html

Show your support for ecocentrism by signing the Statement of Commitment to Ecocentrism

Read and sign it here: <http://is.gd/ecocentrism>

Say My Name and I Will Tell You My Story

What if a meaningful acceptance of other-than-human life could help us to build a stronger appreciation of the full complexity of life, and allow us to weave a new story of reciprocal relationship with nature? What if we followed an indigenous way of being, tuning into our own indigeness to the place where we live? What if we treated other-than-human life with more attention, respect and reverence? What if we tuned into the deeper wisdom that our planet offers, and listened to her guidance?

Earth with all her beings is the largest and most complex organism we know of – a wonder we are part of. Earth speaks with her presence, her complex ecology, her beauty and her purpose.

I offer a radical vision of empathizing with all living beings, regardless of how we classify them and what we know of their intelligence and form. Imagine how this could shift our relationship to the Earth – how it could change our reality! What if this is the key – the secret – to a fuller experience beyond our typical anthropocentric framing. It could be the starting point of a new story.

This vision grows from an experience I had in 2020, in which I heard the voice of a *Eucalyptus* tree: humble, mistreated, sad; taken out of its home, planted in soulless monocultures around the world for paper production, including in Portugal, where I live. A sacred *Eucalyptus* tree appeared to me in a dream and spoke to me. From that moment, walking amongst *Eucalyptus*

was never the same experience. I heard the trees' voices: they asked me if we could collaborate, as they had messages to communicate to us, humans.

As an artist, I explored further. Working with the materials the trees naturally offer – leaves and bark – I began to create botanical prints on fabric, thanks to the presence of tannins in the *Eucalyptus*. I feel that through my art the trees are given a voice; they speak to us. There are many messages that the trees have offered me, including methods of working with them and a rich variety of ways of immersing myself in their world, through sensorial and contemplative practices.

This journey continues, as we – the *Eucalyptus* trees and myself – agreed to weave a new story together through the art project *Say My Name and I Will Tell You My Story*.

The essence of the message I received from *Eucalyptus* trees is clear: open our senses to what non-human life has to say. What we will hear will reconnect us with Earth, begin our healing process, and ultimately help us to see better solutions to our ecological and cultural crisis.

The stories we tell ourselves build, destroy and reinvent our world. The anthropocentric story we have told ourselves is missing the language of nature – pulsating, luminous, wild, abundant, alive. We have forgotten how to listen to nature; we have forgotten how to speak to her. Listen deeply. Let her into your life. We will understand once again. The voice will come. To tell a different story. ■

Evgenia Emets

About the author

Evgenia is an artist based in Portugal.

Citation

Emets E (2021) *Say My Name and I Will Tell You My Story*. *The Ecological Citizen* 4: 107.

Keywords

Art; ecological empathy



More details on the project

Say My Name and I Will Tell You My Story was curated by Ines Valle, the Cera Project.

For further information, see: <https://is.gd/sayname>.

Artworks from the project are presented on the pages that follow.

Say My Name and I Will Tell You My Story

by **Evgenia Emets**

About the artworks: Botanical prints on cotton fabric with wood fixings (2020; various dimensions).

Higher-resolution version: <https://is.gd/ecoartwork>







Eco-social justice in an anthropocentric world

In a recent post on the *Earth Tongues* blog, Patrick Curry (2020) argues that “identity politics and exclusive social justice activism have serious flaws,” as their anthropocentric focus on human beings and how they relate to the world turns a blind eye to ecology. Although Western society has placed a great deal of emphasis on inclusion, the true question is really ‘inclusion into *what*, exactly?’

We began our own journey into social justice with a largely anthropocentric perspective. It was while facilitating the Agents of Change Project (created by James Reed in collaboration with Shelley Sacks) that we began to see *eco*-social justice as crucial, and to examine how ecological justice combines with social justice to create a possible future for the Earth. One of the factors that prompted this revaluation was seeing how anthropocentric accounts of social justice often proved an uncomfortable fit for many of the African people who took part in our project. This was because, as Lesiba Baloyi (2008) explains, many traditional African belief systems incorporate other-than-human nature as part of the self.

Anthropocentric descriptions of the self, such as found in mainstream psychology, may masquerade as ‘universal’ or ‘common-sense’, but in fact they are highly culturally specific. Their claimed ‘universality’ relies on making invisible a whole range of alter-native conceptions of the self, such as those found in African and other indigenous belief systems. These alternatives were often devalued under colonialism – something Baloyi (2008) refers to as ‘epistemicide’. This is why Grosfoguel (2012) argues that there are implicit racisms still present within many social science disciplines – racisms that

are deeply connected to the dominance of anthropocentric belief systems. For this reason, as Simpson (2014) suggests, a move away from colonial racisms is a move towards re-embracing ecocentrism.

Historically, violations of the Earth – through activities such as large-scale monoculture farming or mining – have been linked to violations of human rights, often connected to social hierarchies and the capitalist belief that land is there as a resource for human exploitation (Anthony, 1995). By understanding how human and ecological rights intertwine, it is possible to move forwards from a social justice to an *eco*-social justice model. This means working towards a world where *all* beings are given value (Sacks and Zumdick, 2013). As Simpson (2014) explains, by turning towards nature, human beings can learn from the non-human beings who surround us. This encourages an engagement with a wisdom far greater than our own.

In the words of an Agent of Change:

People are not superior to each other, the animals or the Earth. By destroying our world you also destroy people [...] Our needs are connected to the Earth [...] People need our Mother Earth to nurture us and teach us and we need to love and nurture her too.

The Agents of Change project taught us that social justice is important, but needs to be combined with decolonized perspectives. By embracing a pluriversity and engaging with multiple belief systems, social justice is able to fight racisms, embracing ecocentric worldviews in order to do so. ■

For references see next page

Nicci Attfield
and James Reed

About the author

Nicci is a writer and researcher who is completing a PhD in *eco*-social justice through the Wits Center for Diversity Studies.

James is a social sculpture practitioner and a creator and mentor of the Agents of Change Project.

Citation

Attfield N and Reed J (2021) *Eco-social justice in an anthropocentric world*. *The Ecological Citizen* 4: 111–12.

Keywords

Anthropocentrism; *eco*-socialism; environmental humanities

References

- Anthony C (1995) Ecopsychology and the deconstruction of whiteness. In: Roszak T, Gomes ME and Kanner AD, eds. *Ecopsychology: Restoring the earth, healing the mind*. Sierra Club Books, San Francisco, CA, USA.
- Baloyi L (2008) Psychology and psychotherapy redefined from the view point of the African experience. PhD thesis, University of South Africa, Pretoria, South Africa.
- Curry P (2020) The poverty of identity politics. *Earth Tongues*, 1 October. Available at <https://is.gd/LVho2B> (accessed January 2021).
- Grosfoguel R (2012) The dilemmas of ethnic studies in the United States: Between liberal multiculturalism, identity politics, disciplinary colonization, and decolonial epistemologies. *Human Architecture: Journal of the Sociology of Self-knowledge* **10**: 81–90.
- Sacks S and Zumdick W, eds (2013) *Atlas of the Poetic Continent: Pathways in ecological citizenship*. Temple Lodge Publishing, Forest Row, UK.
- Simpson L (2014) Land as pedagogy: Nishnaabeg intelligence and rebellious transformation. *Decolonization: Indigeneity, Education & Society* **3**: 1–25.

Advertisement (placed at no charge)

"An excellent introduction to the different schools of ecological ethics and, as importantly, a strong defence of why a deep green (or ecocentric) ethics represents the future of ethics..."

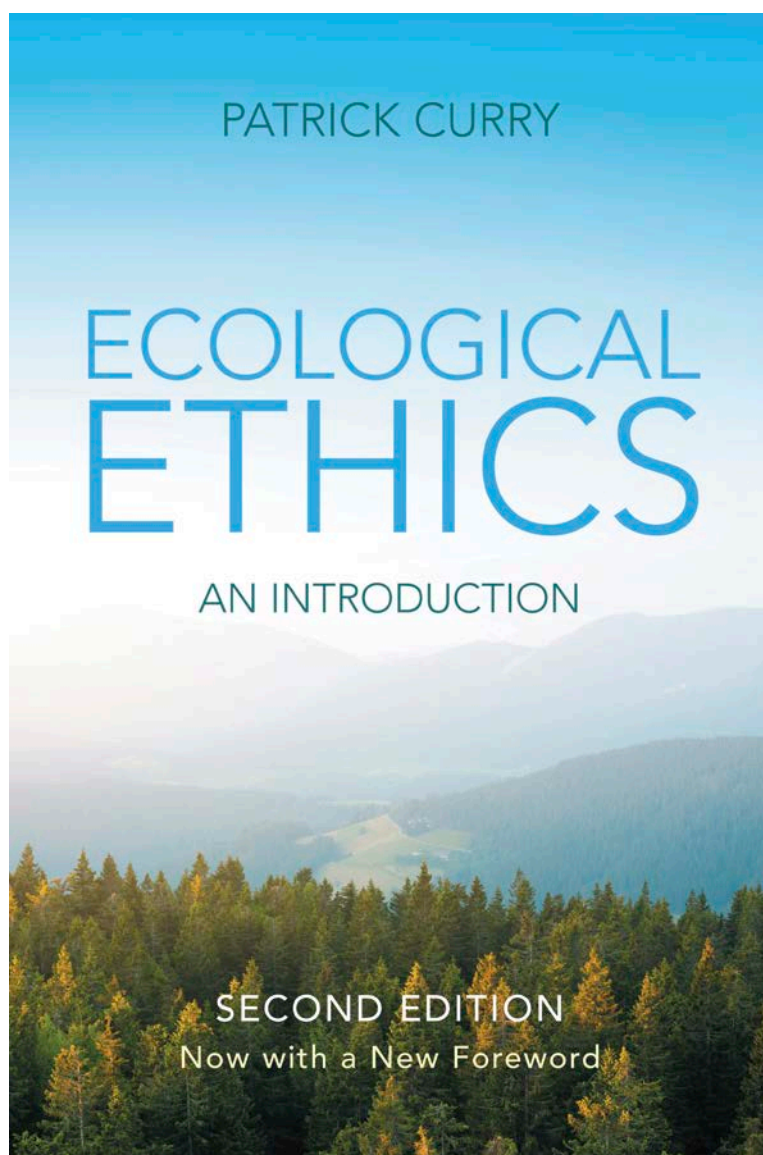
Erik Assadourian

Senior Fellow and Director of the
Transforming Cultures Project,
Worldwatch Institute

ISBN-13 (hardback): 978-0745651255

ISBN-13 (paperback): 978-0745651262

<https://politybooks.com/>



Toward a new way of being with plants

Free online conference

June 17 - 18, 2021

www.beingwithplants2021.org

Learn. Share. Connect.

Artwork courtesy of Zachari Logan. Detail image,
Esta Selva Selvaggia, No. 2, pastel on black paper,
47 x 94 inches, 2019.

Where the river runs through (selected images from photo essay)

by **Aaron Vincent Elkaim**

From the artist: The Belo Monte dam, nearing completion on the Xingu River, which was home to Brazil's first indigenous reserve. On the neighbouring Tapajos River – the last undammed tributary of the Amazon River – the Mundurucu tribe has been successfully fighting against a similar fate. Hydroelectric dams may be renewable sources of energy, but they can require the flooding of hundreds of square miles of land, and complex river ecosystems are permanently transformed. In the Amazon, they release large quantities of methane, while new infrastructure and population growth open the forest to increased logging, mining and agriculture.

Higher-resolution versions: <https://is.gd/ecoartwork>









A small farm future

Chris Smaje

About the author

Chris is a small-scale farmer in south-west England, and a current director of the Ecological Land Co-op. Previously he was a university-based social scientist. For more information, see www.smallfarmfuture.org.uk.

Citation

Smaje C (2021)
A small farm future.
The Ecological Citizen 4: 118–19.

Keywords

Agriculture

You don't need to be too obsessed with current affairs to appreciate that modern global civilization is running into various crises: the sources of its material culture are dwindling, so are the sinks for its wastes and pollution, while growing inequalities and dwindling faith in existing politics are prompting profound social crises worldwide.

One response to this modern crisis is to double down on the ideologies that have prompted it. The keywords here are ones like progress, science, growth, money, trade, prosperity, control. If only we can augment the good aspects of these things while curtailing the bad through greater technical control, the argument runs, then we can barrel through the present crisis towards a better tomorrow.

Like many, I find that argument increasingly unpersuasive. Humans are inventive at creating symbolic systems (such as money or social status) that create intense linkages between ourselves and that bring forth intense activity, but neither the ecological base nor our own social systems can sustain them long-term. This tendency has been turbocharged in recent centuries by the development of global grain farming and trading, the exploitation of fossil fuels, and the development of fluid global investment capital. Together, these have largely broken the possibilities for people to emplace themselves locally in renewable ways that enrich both human and non-human life.

We can create alternative linkages that rebuild those possibilities – but there is no simple path for doing so and no singular point of arrival at an ecocentric society. Some people dismiss the idea that there are trade-offs between different desired ends as an ideological fiction of right-wing

economics, but unfortunately this isn't so. Trade-offs abound in the natural world. They are why penguins can dive deeper than puffins, but are unable to fly. More pertinently for present human dilemmas, they are why farmers can produce a torrent of cheap nutritional energy from grain fields, but at the cost of much ploughing, weeding, greenhouse gas emissions, soil and wildlife destruction – and at the cost of human health.

It's worth looking at how preindustrial and other low-energy societies have confronted these trade-offs historically. Typically, they did so in most parts of the world through mixed farming strategies that carefully optimized the relationships between woodlands, fields, pastures, gardens and livestock (raised primarily for the ecological work they did on the farm, not for their meat), with the farm household as the hub of these ecological flows. We could do worse than learning from these examples of small farm societies – as inspirations rather than as blueprints. They point to primarily horticultural strategies of household and locality self-provisioning, with strictly limited flows of non-local capital.

These strategies in turn raise some trade-offs of human society. How to balance the farm household as an ecological unit with the autonomy of its members, particularly women? And how to balance the autonomy of the farm household with its need to work collectively for wider social purposes? We surely need to be debating such questions more urgently than we presently are.

We're not debating them presently because the political landscape is dominated by unprecedentedly centralized states presiding over vast mass societies and orchestrating the flow of resources

across them in ways that are obstructive of creating local ecological livelihoods and inimical to more ecocentric views of our agency. Practically, politically, ideologically, the prospects for a small farm society often seem impossible or absurd in the face of this present reality. Yet many of these states are already mired in potentially terminal crises of political legitimacy and economic turbulence, with waning power to organize political space across their nominal territories. The need to create institutions to secure livelihood renewably from the local ecological base

and to forge associated political cultures within the vacuum of the modernist state may be upon many of us sooner than we think.

This is the context in which – if we play a skilful hand – we may just be able to wrest a more civic ecological order out of the present crisis. What this looks like on the ground is a small farm future, as I examine in more detail in my book *A Small Farm Future: Making the case for a society built around local economies, self-provisioning, agricultural diversity and a shared Earth* (Chelsea Green Publishing, White River Junction, VT, USA, 2020). ■

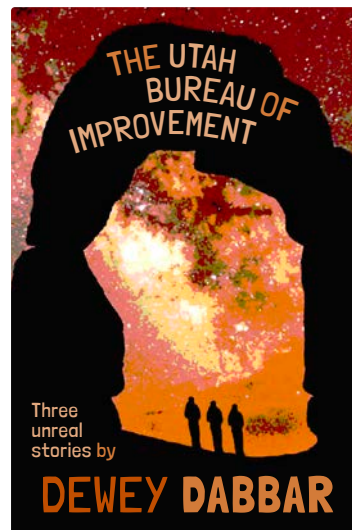
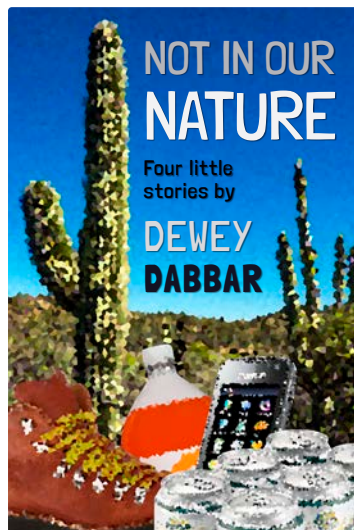
Advertisement (placed at no charge)

Two new ecofiction e-books from Impudent Raven

Available for free via Smashwords

Published November 2020

At the intersection of conservation, environmentalism, and human nature – boy, what a busy junction! – these four stories show that Dewey Dabbar really has his finger on the pulse with his latest offering. Whether that's the blisteringly fast pulse of a shrew or the lethargic beat of a resting whale is something that you will need to decide for yourself.



Published August 2020

In the near future, Utah's most beautiful areas are being run more as theme parks than national parks, while in Oregon the government and big tech are colluding on a 'smart' fix to the eyesores created by clearfelling. The thread that links these is a secretive agency known as UBI. Does the public still have the spirit of rebellion?



Find the books at www.impudentraven.uk/books.html

An ecocentric reworking of the Deep Ecology eight-point platform

Stan Rowe

1 The well-being and flourishing of the living Earth and its many organic/inorganic parts have value in themselves (synonyms: intrinsic value, inherent value). These values are independent of the usefulness of the non-human world for human purposes.

2 Richness and diversity of Earth's ecosystems, as well as the organic forms that they nurture and support, contribute to the realization of these values and are also values in themselves.

3 Humans have no right to reduce the diversity of Earth's ecosystems and their vital constituents, organic and inorganic.

4 The flourishing of human life and culture is compatible with a substantial decrease of the human population. The creative flourishing of Earth and its multitudinous non-human parts, organic and inorganic, requires such a decrease.

5 Present human interference with the non-human world is excessive, and the situation is rapidly worsening.

6 Policies must therefore be changed. These policies affect basic economic, technological and ideological structures. The resulting state of affairs will be deeply different from the present.

7 The ideological change is mainly that of appreciating life quality (dwelling in situations of inherent worth) rather than adhering to an increasingly higher standard of living. There will be a profound awareness of the difference between big and great.

8 Those who subscribe to the foregoing points have an obligation directly or indirectly to participate in the attempt to implement the necessary changes.

For more on this visit <https://is.gd/eco8points>

Sympoiethics: For the Love of a Field

We are of and belong within nature. Human wellbeing and social justice are intimately entangled with caring for the places we humans inhabit. In exploring ecological citizenship, our arts collaboration Touchstones Earth asks the question “What is a truly human human being?” The concept of *sympoiethics* – a term that combines *sym* (with), *poieisis* (to make) and *ethics* – is the lodestar for our inquiry.¹

A central thread of our arts practice is hosting ritual encounters with food and land to enliven the interconnections between humans and the Earth. As an “ecology of practices for cultivating response-ability” (Haraway, 2016: 34), these are sensuous and sense-making experiences which re-mind us of how our consciousness co-exists with the sentient world. These embodied ritual explorations are expressions of *rta* – a Sanskrit term which is the root of both *art* and *ritual*, and which can be translated as “the dynamic movement from which all arises” (Haley, 2016: 46).

Our on-going arts project *For the Love of a Field* is based upon exploring the thought “What a farm can be.” Its genesis was in 2010 on an organic farm in Oxfordshire, UK. In 2017, it emerged as *FieldTable*, a ritual feast hosted on biodynamic land in South Africa. In 2020, the residency continues in Suffolk, UK, where we live and work. As guardians of an agricultural field of ten acres we are called to become *animateurs* of its transformation from a mono-cultured system towards regenerative landscapes of enriched natural-cultural diversity.

For the Love of a Field engenders an ecology of care with the *genius loci* of the field:

It all begins with the observations of a land healer.

*A small wooden bridge on the verge of the field
is where we first meet and honour the land.*

*Here is a focus for shelter and sanctuary.
Here, on the margin, we plant a larch tree as a FieldShrine.*

*We conduct fire ceremonies during full moon, we offer rituals of gratitude;
we walk the field, we sit with it, we study its hedgerows;
we lie on it, talk with it, sing to it, grieve with it, light candles on it;
we draw, we photograph and film the changing seasons,
we make artworks and create writings;
we handle and dig and test its soil; we make sounds with its hard clods;
we picnic on it; we introduce our kin;
we trace the contours, we plot the waterways, we harvest its hedge fruit;
we inquire, we consult, we go on a research pilgrimage, we make a film;
we host a forum, we welcome conversations, ideas and inspirations;
we map a vision;
we disperse a preparation of gold, frankincense and myrrh;
we plant trees.*

We share our love of the field.

For the Love of a Field re-encultures art and ritual in the everyday. It integrates the diverse sensibilities and multiple intelligences of the eco-bodymind – rational intellect, intuition, instinct, memory, the senses, emotion and imagination. An ethical life unfolds as a daily ecology of practices in care, a living mythology, a story of re-integration, of regeneration, of co-operation.

**Miche Fabre
Lewin and Flora
Gathorne-Hardy**

About the authors

Miche and Flora are artists and researchers dedicated to enlivening cultural and ecological diversity through socially-engaged arts. For more information, see www.touchstones.earth.

Citation

Fabre Lewin M and Gathorne-Hardy F (2021) *Sympoiethics: For the Love of a Field*. *The Ecological Citizen* 4: 121–2.

Keywords

Agriculture; art; ecological ethics; ritual

“The art and culture of sympoiethics engages with the intertwining of human oppression and planetary degradation.”

The art and culture of sympoiethics engages with the intertwining of human oppression and planetary degradation through a continuum of living, loving, thinking, making, eating, cooking, knowing, not knowing, feeling, being, acting and re-imagining. We are in time for tuning into our ecological sovereignty with lives dedicated to human freedom and respect for the living Earth, all within the sacred web of interconnectedness. ■

Notes

- ¹ For further discussion of Beth Dempster's concept of *sympoiesis* see Fabre Lewin (2019) and Fabre Lewin and Gathorne-Hardy (2021).

References

- Fabre Lewin M (2019) Artful bodymind: Enlivening transformative research methodologies. PhD thesis, Coventry University, UK. Available via www.touchstones.earth.
- Fabre Lewin M and Gathorne-Hardy F (2021) Art of food rituals as a practice in sympoiethics. In: Wright J, ed. *Subtle Agroecologies: Farming with the hidden half of nature*. Taylor and Francis, London, UK: in press.
- Haley D (2016) A question of values: Art, ecology and the natural order of things. In: Demos TJ, ed. *Elemental: An arts and ecology reader*. Gaia Project Press, Manchester, UK.
- Haraway D (2016) *Staying with the Trouble*. Duke University Press, London, UK.

Show your support for ecocentrism
by signing the Statement of
Commitment to Ecocentrism

Read and sign it here: <http://is.gd/ecocentrism>

Never miss an issue of *The Ecological Citizen*

Sign up for content alerts at:
www.ecologicalcitizen.net/#signup

Beavers are still facing an uncertain future in Scotland

In early 2017, at the time of the launch issue of *The Ecological Citizen*, the future for the European beaver (*Castor fiber*) in Scotland looked bright, following the Scottish Government's acceptance of both the beavers at the trial reintroduction site at Knapdale in Argyll and the 'unofficial' population in the Tay River catchment as re-established native species (Watson Featherstone, 2017). Since then, however, there has sadly been very little progress in enabling this keystone species of freshwater ecosystems to expand into other river catchments throughout Scotland.

At the time of the government announcement in November 2016, and under pressure from farming interests on Tayside whose lands had been affected by flooding from beaver dams, the Environment Secretary, Roseanna Cunningham, said that "while the species will be permitted to extend its range naturally, further unauthorized releases of beavers will be a criminal act. Swift action will be taken in such circumstances to prevent a repeat of the experience on Tayside" (Scottish Government, 2016).

The contrast between that statement and the Scottish government's attitude of unquestioning acceptance towards the unregulated annual release of millions of non-native 'game' birds such as pheasants and red-legged partridges by landowners for sporting purposes (i.e. shooting) illustrates starkly that the government is more concerned about not upsetting powerful landowning and farming interests than about seriously improving the parlous state of the country's depleted ecosystems.

For the beaver, the reality is that the isolation of the Knapdale population on the Kintyre peninsula and the geographic barriers of the Cairngorms massif to the

north of the Tay catchment and the densely populated Central Belt to the south, mean that the options for a natural expansion of its range are very limited, although there is much suitable habitat for the species elsewhere in Scotland.

In May 2017, a population of free-living beavers, including a lodge with young kits, was discovered on the Beauly River, west of Inverness, with the weathered condition of beaver-felled trees nearby indicating that the animals had been there for at least five years. Most local people were unaware of the presence of the beavers and there had been no flooding damage reported to farmers' fields – unlike the Tay catchment, there is no arable farming on that section of the Beauly River. Despite the absence of any problems or conflict with farming interests, the government conservation agency, Scottish Natural Heritage, acting on Roseanna Cunningham's order of 'swift action', immediately instigated a capture programme for these 'illegal' beavers. Three individuals were caught and taken into captivity, but within 24 hours two of the beavers had died, to the dismay and outrage of conservationists and wildlife enthusiasts.

That experience, plus the ongoing unresolved conflict on Tayside, increased the pressure for official protection for beavers, and in February 2019 the government finally announced that it was adding the European beaver to the list of European Protected Species of Animals protected under Scottish law, effective from 1 May 2019 (Scottish Government, 2019). However, the protection provided by this listing was tempered by a provision for licences to be issued by Scottish Natural Heritage (now rebranded as NatureScot) for culling of beavers that were causing problems for

Alan Watson Featherstone

About the author

Alan is a freelance ecologist and the founder of Trees for Life, a charity based in Findhorn, UK.

Citation

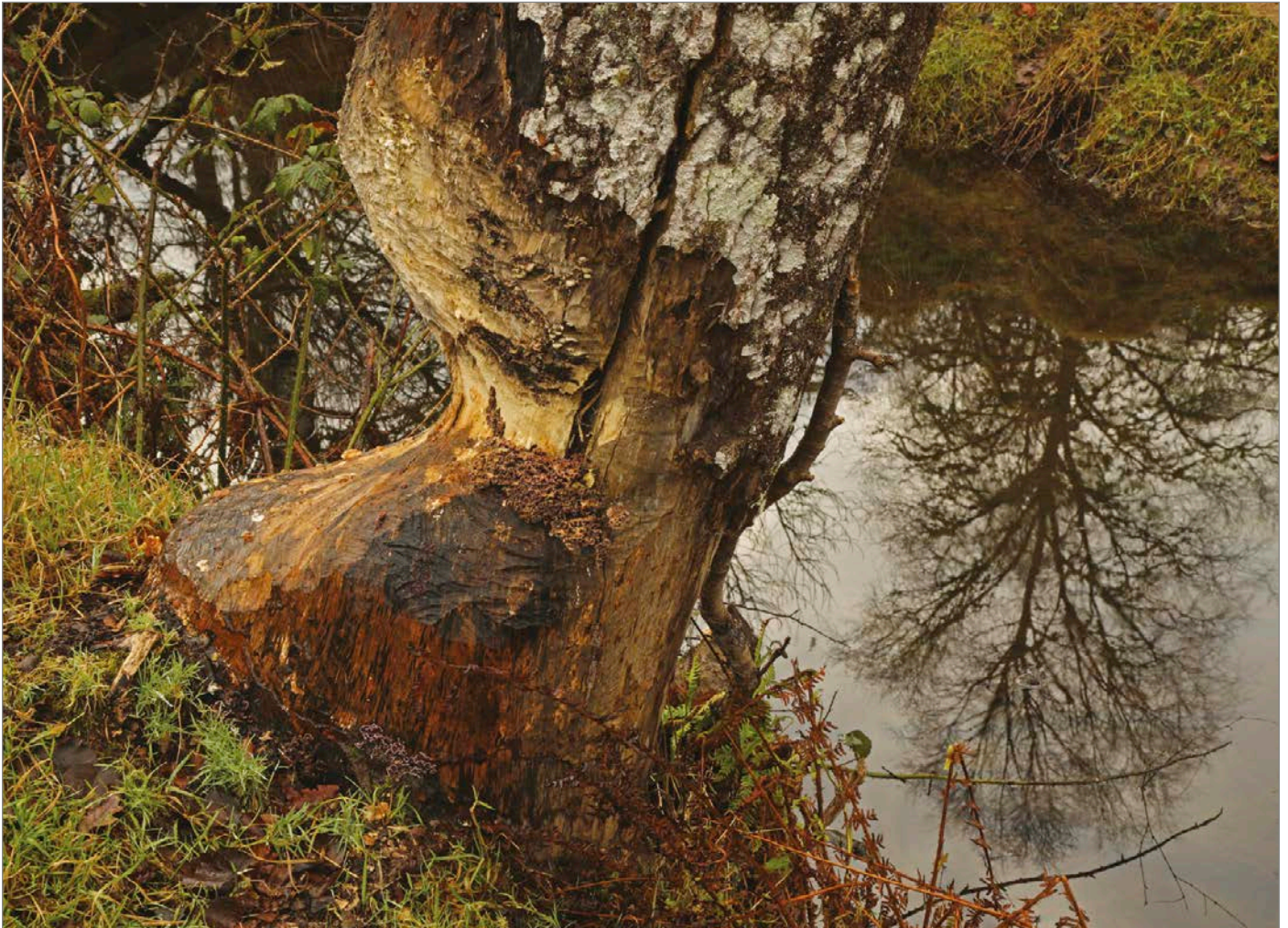
Watson Featherstone A (2021) Beavers are still facing an uncertain future in Scotland. *The Ecological Citizen* 4: 123–5.

Keywords

Rewilding; species reintroductions

About Trees for Life

The mission of Trees for Life is "to rewild the Scottish Highlands by enabling the restoration of the globally unique Caledonian Forest." For more details, visit: <https://treesforlife.org.uk>.



A partially chewed aspen tree on the Beaully River in February 2017 (photo by Alan Watson Featherstone).

farmers, where there was no other viable method of control.

Although the stated intention was that shooting beavers was only to be used as a last resort, when all other alternatives had failed, in practice it soon became apparent that the reality was quite different. In May 2020, NatureScot reported that between May and December 2019 a total of 87 beavers (representing 20% of the country's population) were shot under licences the agency had issued, and only fifteen beavers were trapped and relocated, either to the population at Knapdale in Argyll, or to fenced trial reintroduction sites in England (NatureScot, 2020).

Alarmed at this officially sanctioned slaughter of a supposedly protected species, the Scottish Rewilding Alliance (a coalition of 24 conservation organizations and other groups) lodged a petition with the Scottish

Parliament in August 2020, calling on the government to initiate a programme of beaver translocations within Scotland that would minimize the need for culling, but so far that has been rebuffed. Subsequently, the conservation charity Trees for Life (one of the members of the Scottish Rewilding Alliance) initiated legal action in December 2020 calling for a judicial review of NatureScot over its failure to make the killing of Scotland's wild beavers a genuine last resort (Trees for Life, 2020).

Although it is the official government conservation agency in Scotland, NatureScot has had a long history of being undermined, re-organized, weakened and reduced in its effectiveness by successive governments. It was originally part of the UK-wide Nature Conservancy Council, which was broken up by the Thatcher government in 1990 – with its Scottish arm becoming the Nature

Conservancy Council for Scotland. However, that organization only existed for a year before it was merged with the landowner-dominated Countryside Commission for Scotland to form Scottish Natural Heritage in 1991. In due course, that agency was forced to withdraw its original objection to the funicular railway that was proposed and subsequently built in the heart of the Cairngorm Mountains, and also had its headquarters moved from Edinburgh to Inverness – decisions that prompted the departure of some of its best and most committed staff. Although there are still good people in the agency, successive budget cuts and the overriding of its objections to developments such as the Trump organization's Menie golf course that destroyed a Site of Special Scientific Interest north of Aberdeen, have left it demoralized and ineffective in standing up for nature in the face of government dictates and pressure from vested interests. Its inability to safeguard Scotland's fragile population of recovering beavers is just the latest example of this.

At the conference *Wild, Free and Coming Back?*, held in 2008 on the possible return of Scotland's extirpated mammal species, I gave a presentation in which I proposed a '20-20 Vision' for the beaver – of there being healthy, free-living beaver populations at 20 different sites throughout Scotland by 2020. The unfortunate reality is that today there are still only the two populations, and that landowners and local communities who have said they would welcome beavers in their areas are unable to receive any, whilst Scotland has become an exporter of live beavers to various fenced reintroduction sites in England. If that trend continues there will soon be beavers (albeit inside fenced enclosures) at a greater number and wider geographic range of sites in England than in Scotland. From having been in the forefront of beaver reintroductions in the UK, Scotland is at serious risk of being left behind, as England and also Wales welcome back the beaver.

This is despite the fact that there is so much suitable habitat in Scotland, strong support from the Scottish public

for the return of beavers to more of the country, and an urgent need to improve the ecological health of the country's rivers and freshwater ecosystems. All that is being overridden by the government's attempts to appease a small but vocal and politically powerful group of farming interests in one part of the country. It is symptomatic of so much of modern society, where the economic interests of the few take precedence over the ecological health of what is recognized widely as one of the most nature-depleted countries in the world.

On 14 December 2020, the Scottish Government announced new plans for tackling biodiversity loss in the country, and the Chief Executive of NatureScot stated: "We need nature for our survival – but our nature is in crisis. We have to work quickly and at a scale not seen before" (Scottish Government, 2020). For those not just to be more empty words, the government and NatureScot need to take meaningful practical action. Approving the translocation of beavers from Tayside to other catchments in Scotland, instead of further officially sanctioned killing of a species that is protected by law, would be a good place to start, and anyone in Scotland can help the cause by contacting their local Member of the Scottish Parliament to support this. ■

References

- NatureScot (2020) Lead nature agency publishes beaver licensing statistics. Available at <https://is.gd/d8gJOU> (accessed December 2020).
- Scottish Government (2016) *Beavers to remain in Scotland*. Available at <https://is.gd/qT53s9> (accessed February 2021).
- Scottish Government (2019) *Beavers given protected status*. Available at <https://is.gd/T79vJ5> (accessed December 2020).
- Scottish Government (2020) 30% of Scotland's land to be protected for nature. *Scottish Government*, 14 December. Available at <https://is.gd/QzVzt5> (accessed January 2021).
- Trees for Life (2020) Trees for Life launches court challenge to Scottish Government's 'licence to kill' beaver policy. *Trees for Life*, 8 December. Available at <https://is.gd/hxuJE2> (accessed December 2020).
- Watson Featherstone A (2017) A positive future for beavers in Scotland. *The Ecological Citizen* 1: 27–8.

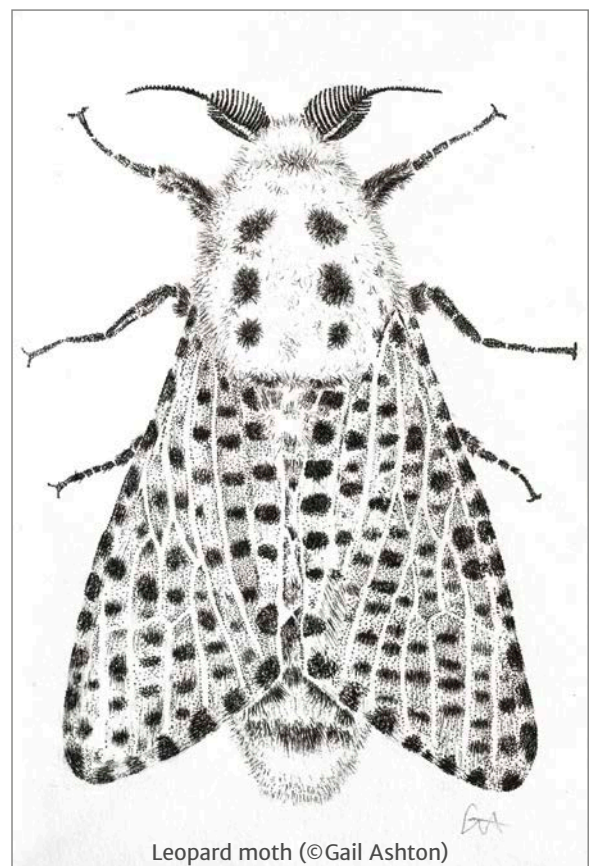
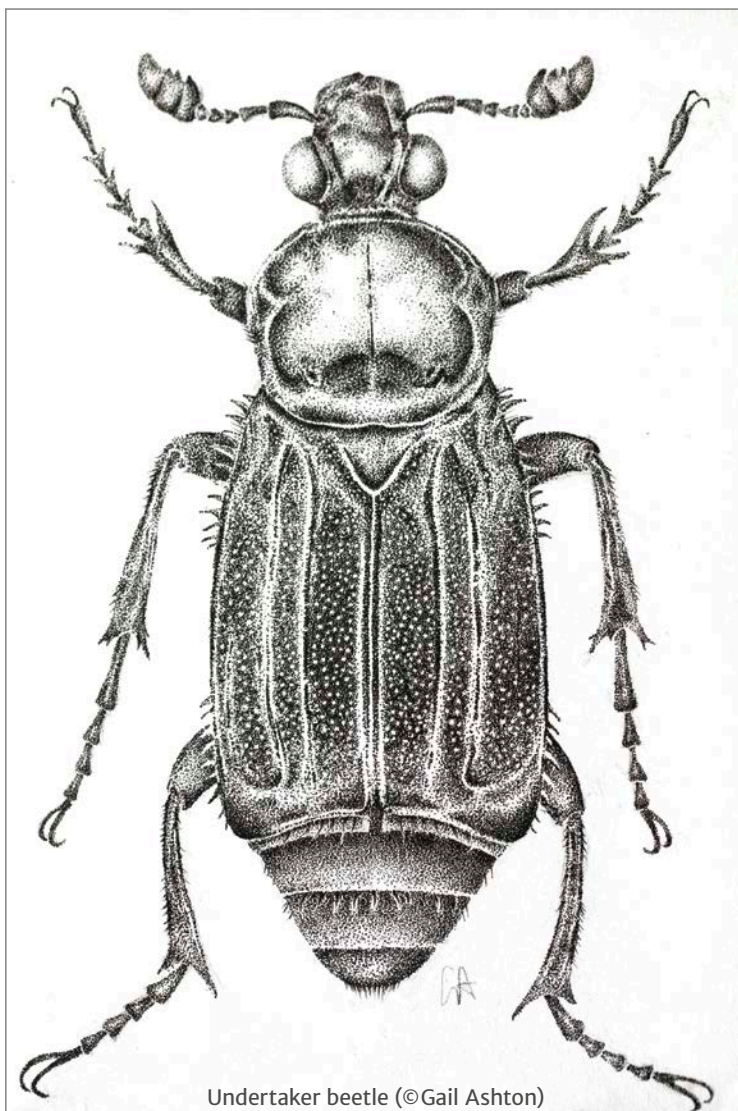
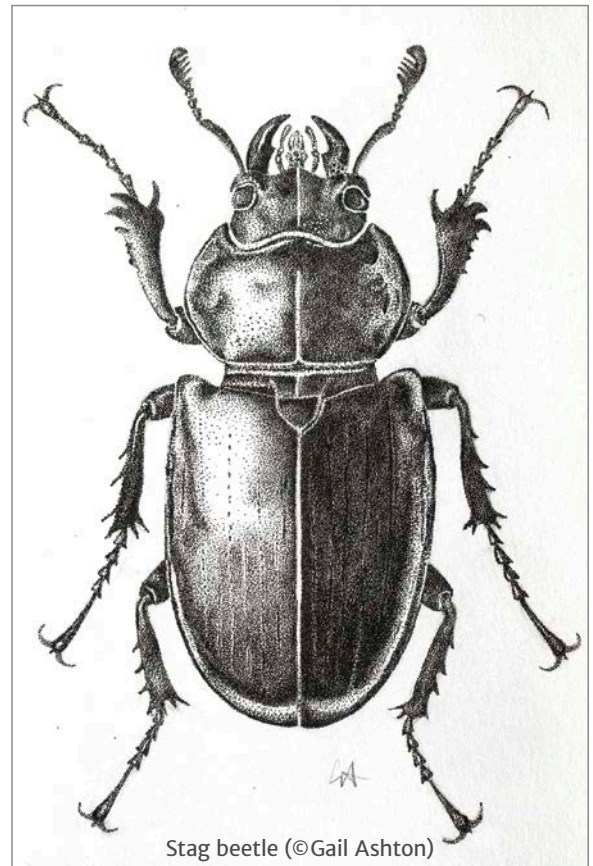
“It is symptomatic of so much of modern society, where the economic interests of the few take precedence over the ecological health of what is recognized widely as one of the most nature-depleted countries in the world.”

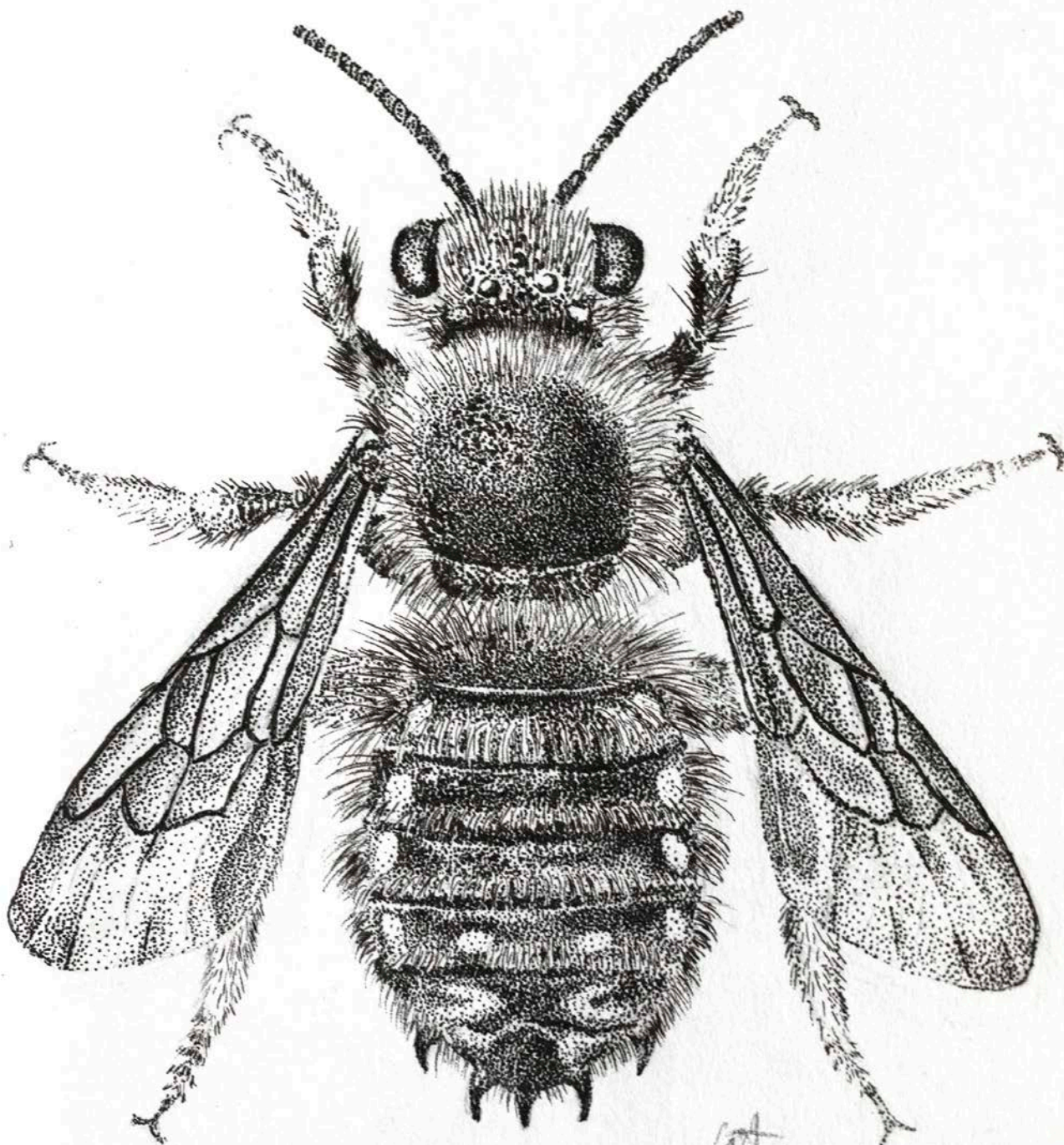
Insect drawings by Gail Ashton

From the artist: The drawings are made with a very fine, 005 black pigment pen on white cartridge paper. They are all approximately A6 (postcard) size. They were all made in 2020–21. I take macro photographs of invertebrates during the spring and summer months, but most of them disappear during the winter. I started drawing to fill the gap over the winter months until they re-emerge again.

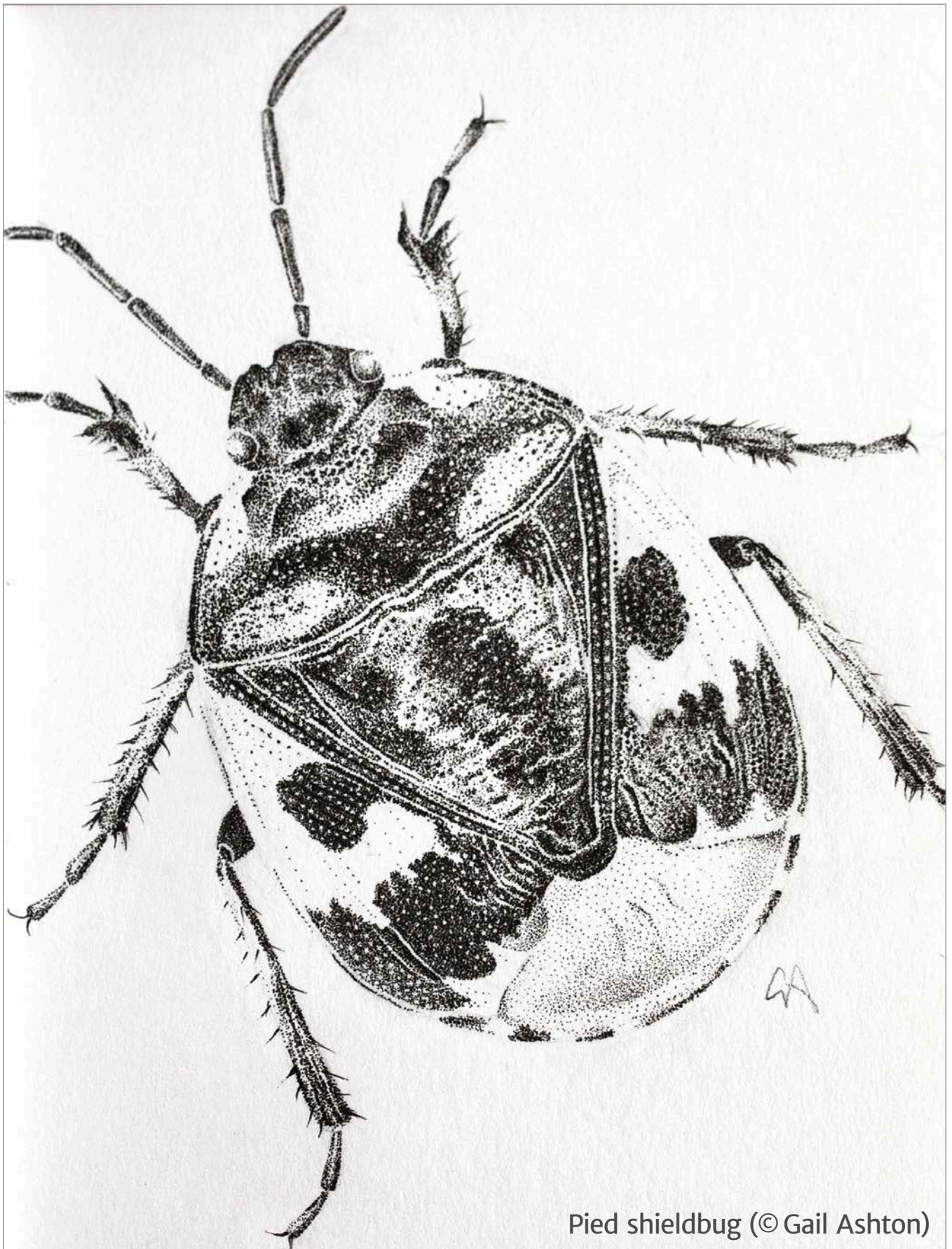
I love drawing insects because they have such fascinating shapes and textures. My macro photos allow me to see these beautiful animals extremely close up, and truly appreciate the fine detail of their exoskeletons. I draw using mainly dots to create texture and tone, with short strokes to make the hairs (setae). Each drawing takes 5–10 hours.

Higher-resolution version: <https://is.gd/ecoartwork>





Wool carder bee (© Gail Ashton)



Pied shieldbug (© Gail Ashton)

Understanding and solving the South-East Asian snaring crisis

Snaring is one of the simplest but most destructive hunting techniques. Snares, cheap to produce and easy to set in large numbers, are the predominant form of hunting across large areas of South-East Asia. Snares are indiscriminate, wasteful, and cruel. For terrestrial species in South-East Asia, the increasing use of snares – principally to feed urban demand for wildlife meat – is among the most significant causes of population declines. Across eleven protected areas in the region, the authors document ranger patrols removing a total of 371,056 snares between 2005 and 2019. However, owing to the low detectability of snares and the large size of many of the region's protected areas, which are invariably understaffed, the number of snares removed is likely only a small fraction of total snares present. To effectively address the drivers of snaring, governments and civil society organizations need to urgently improve the effectiveness of anti-poaching patrols generally, and specifically strengthen legislation to allow law enforcement officers and rangers to deter snaring within protected areas. Robust and evidence-based behaviour change programs to reduce commercial demand for wildlife meat should simultaneously be developed.

South-East Asia is at the centre of the global wildlife extinction crisis, with more threatened species across almost every taxonomic group than any other comparable region (Benítez-López *et al.*, 2017; Leung *et al.*, 2020). Habitat loss and the unsustainable consumption and use of wildlife are driving the extinction crisis in South-East Asia (Duckworth *et al.*, 2012; Hughes, 2017). Hunting, largely to supply expanding commercial trade, constitutes perhaps the largest current threat to wild vertebrates in the forested areas of South-East Asia (Harrison *et al.*, 2016). Hunting is so pervasive and intense that even where areas of good quality forest remain, there is increasingly near total loss of certain groups of taxa, particularly large mammals and turtles. Substantial areas of forest throughout mainland South-East Asia have lost many of the previously present species of ground dwelling mammals (Harrison *et al.*, 2016; Tilker *et al.*, 2019). Such areas tend to have one thing in common: widespread snaring. Snares are rudimentary traps often set in large numbers by commercial poachers to capture animals for the illegal wildlife trade

(Gray *et al.*, 2018). For terrestrial species in South-East Asia, the increasing use of snares – principally to feed urban demand for wildlife meat – is among the most significant causes of population declines (Gray *et al.*, 2018; Belecky and Gray, 2020).

Snaring is one of the simplest but most destructive hunting techniques practised in South-East Asia. Snares are cheap to produce and easy to set in large numbers, with home-made wire, nylon or cable snares the predominant form of hunting across large areas of South-East Asia. Such snares can be produced quickly and cheaply, using materials for which there is an inexhaustible supply, and can remain active in the forest almost indefinitely. Easier access into protected areas due to transportation infrastructure development means that fresh wildlife products can be sent to urban centres, where demand for wild meat is high, quicker than ever before. As such, the volume of snares in South-East Asia's forests is phenomenal (Belecky and Gray, 2020).

Because snares can capture all animals unfortunate enough to encounter them, they are the terrestrial equivalent to the drift-nets

**Thomas NE Gray,
Michael Belecky,
Hannah J O'Kelly,
Madhu Rao,
Oliver Roberts,
Andrew Tilker,
Mia Signs and
K Yoganand**

About the authors

Thomas and Michael are affiliated with WWF Tigers Alive Initiative – in Cambodia and Singapore, respectively. Hannah is affiliated with Asian Arks in Lao PDR; Madhu with the Wildlife Conservation Society in Singapore; Oliver with the Wildlife Alliance in Cambodia. Andrew is affiliated with Global Wildlife Conservation and the Leibniz Institute for Zoo and Wildlife Research. Mia and K Yoganand are affiliated with WWF Greater Mekong in Lao PDR.

Citation

Gray TNE, Belecky M, O'Kelly HJ *et al.* (2021) Understanding and solving the South-East Asian snaring crisis. *The Ecological Citizen* 4: 129–41.

Keywords

Biodiversity; conservation; protected areas; sixth mass extinction; wildlife trade

that have devastated marine and freshwater biodiversity. Depending on the type of snare used, anything and everything on the forest floor, from tortoises to elephants, is vulnerable. Because snares can catch such a wide variety of species, they continue to be placed even after the most commercially valuable species become rare in a given area. In this way, snares continue to remove individuals from the population even when that population becomes severely depressed, thus preventing the natural recovery of overexploited species. The effort of setting snares is so low, and the cost so minimal, particularly for nylon or wire snares, that there is negligible disincentive to stop hunters from placing them. Indeed, many snares are set and never checked, with a significant proportion of the animals caught in them left to rot in the snare (Lindsey *et al.*, 2011).

Snares have been singled out as one of the cruellest means of hunting, given that animals can sometimes languish for days or weeks in a snare before dying from their injuries, dehydration or starvation (Noss, 1998; Gray *et al.*, 2018). Even when an animal does escape a snare, it will often perish later from infection caused by the injury, or starve due to the fact that the injury has limited its ability to walk, forage or hunt (Figure 1). A recent study from Zimbabwe, for example, highlighted the cruel and wasteful nature of snaring: more than 60% of the animals found in snares were decomposed and thus unrecovered and wasted (Mudumba *et al.*, 2020). In addition to the suffering and animal welfare issues, the mortality from snaring is significantly impacting animal population dynamics and group and family structure (Loveridge *et al.*, 2020).



Figure 1. Globally threatened animals snared in South-East Asia. Clockwise from top-left: Dhole (*Cuon alpinus*), Cambodia © WWF-Cambodia; Malayan sun bear (*Helarctos malayanus*), Malaysia © WWF-Malaysia / Lau Ching Fong; Asian elephant (*Elephas maximus*), Cambodia © WCS-Cambodia; Tiger (*Panthera tigris*), Malaysia © WWF-Malaysia / Lau Ching Fong.

The impact and scale of snaring in South-East Asia

In many South-East Asian protected areas, rangers and forest guards remove snares which they encounter during routine enforcement patrols. We collated data on the number of snares removed during enforcement foot patrols from 11 protected areas in five South-East Asian countries (Cambodia, Indonesia, Lao PDR, Malaysia, Viet Nam) between 2005 and 2019 (Table 1). There were between three and 10 years of data collected per site. Across all patrolled sites a total of 371,056 snares were removed (approximately 53,000 per year).

Unfortunately, this huge number of snares removed is only the tip of the iceberg. Foot patrols typically only cover a small proportion of each protected area each year. Given the large size and challenging terrain of many South-East Asian protected areas, remote or difficult

to access sections may rarely be visited by enforcement rangers. Studies have also shown that snare detectability, even by relatively well-trained and motivated rangers patrol teams, can be low. Snares are usually small, concealed and spread across vast, remote areas, making them difficult to find and remove. An experimental study that attempted to quantify frequency of snare detection involved a group of Cambodian protected area personnel who were instructed to search prescribed 1×1-km grid cells for ‘dummy’ snares, which had been set by the researcher in collaboration with local hunters. Slightly fewer than 40% of available snares were detected in evergreen forest sites, while just over 20% of snares were detected in mixed forest sites (O’Kelly *et al.*, 2018). A similar study in the same protected area suggested snare detection probability was ~25% within a 0.25 km² area during a 60 minute search

Table 1. Numbers of snares removed by law enforcement rangers from select protected areas in South-East Asia between 2005 and 2019.

Site	Size (km ²)	Snares (total removed)	Snares removed per year (average)	Data period
Srepok Wildlife Sanctuary, Cambodia ¹	3,730	12,600	1,260	2010–19
Phnom Prich Wildlife Sanctuary, Cambodia ¹	2,700	7,219	1,444	2015–19
Seima Wildlife Sanctuary, Cambodia ²	2,990	8,477	942	2010–18
Chhep – Kulen Promtep, Cambodia ²	5,500	10,789	2,158	2014–18
Cardamom National Park, Cambodia ³	5,546	195,206	19,521	2010–19
Nam Et Phou Loey NPA, Lao PDR ⁴	3,000	1,144	191	2010–15
Nam Pouy NPA, Lao PDR ⁵	2,500	240	80	2016–18
Nakai Nam Theun NPA, Lao PDR ⁶	3,445	3,400	850	2016–19
Hue-Quang Nam Saola Reserves, Viet Nam ⁷	320	127,057	14,229	2011–19
Royal Belum State Park, Malaysia ⁸	1,175	1,272	212	2014–19
Kerinci Seblat National Park, Indonesia ⁹	6,500	3,652	365	2005–14

Data sources: ¹WWF-Cambodia; ²WCS-Cambodia; ³Gray *et al.* (2018) and Wildlife Alliance Annual Reports (<https://www.wildlifealliance.org/financial-reports/>); ⁴Gray *et al.* (2018); ⁵WWF-Laos; ⁶Anoulak Annual Reports (<https://www.conservationlaos.com/resources/our-annual-reports/>); ⁷WWF-Viet Nam; ⁸WWF Malaysia; ⁹Risdianto *et al.* (2016).

by trained rangers (Ibbett *et al.*, 2020). As such, the number of snares removed per year by patrol rangers is likely only a very small fraction of the total snares within a protected area (Belecky and Gray, 2020).

The huge number of snares in protected areas across South-East Asia is impacting many of the most threatened mammal species in the region. The dry savannah forests of eastern Cambodia support the largest global population of banteng (*Bos javanicus*; Figure 2), a globally endangered species of wild cattle, which is also an important prey species for tiger (*Panthera tigris*) and leopard (*P. pardus*) (Gray *et al.*, 2012; Rostro-García *et al.*, 2018). Between 2010 and 2020 the banteng population in the core protected areas of the Eastern Plains Landscape decline by 72% – at the same time the number of hunting snares detected by patrol rangers increased over a hundredfold (Groenenberg *et al.*, 2020). It is believed that this massive increase in snaring in the landscape, largely to poach smaller ungulates for commercial wildlife meat restaurants, was a significant driver of the decline in banteng numbers (Groenenberg *et al.*, 2020). High levels of snaring in the landscape have also directly contributed to the collapse of Indochinese leopard populations in the region: from 2009 to 2014, leopard numbers declined by 70%, primarily because of increased poaching pressure (Rostro-García *et al.*, 2016).

In the Annamite mountains of Viet Nam and Lao PDR – an isolated mountain range that supports exceptionally high levels of species endemism – threatened mammals including large-antlered muntjac (*Muntiacus vuquangensis*), Annamite striped rabbit (*Nesolagus timminsi*; Figure 2), and saola (*Pseudoryx nghetinhensis*) are severely impacted by snaring. Remarkably, all of these species were only described to science during the 1990s – and are now already facing extinction. None of these recently discovered species are specific targets for snaring, but are instead caught as by-catch in generalist snares. As a result of presumed populations declines, Annamite striped rabbit is IUCN-listed as Endangered, while large-antlered muntjac and saola are Critically Endangered (Timmins *et al.*, 2016; Timmins *et al.*, 2020; Tilker *et al.*, 2020). Due to the insidious impact of snaring across the Annamites, and the difficulty in curbing this activity, conservationists have highlighted establishing captive managed populations of these species as the best opportunity to prevent their imminent extinction (Tilker *et al.*, 2017).

Asian elephants (*Elephas maximus*) are the largest land mammal in Asia and are generally not deliberately hunted using snares. However, elephant calves are particularly susceptible to snare injuries on both their feet and trunks. In the Cardamom Rainforest Landscape of South-West Cambodia, camera-trapping



Figure 2. Two globally Endangered species impacted by the South-East Asian snaring crisis: Banteng (*Bos javanicus*; left), Cambodia © WWF-Cambodia; Annamite striped rabbit (*Nesolagus timminsi*; right), Vietnam © Leibniz-IZW / WWF-Vietnam CarBi Project / Hue SNR.

found that more than half of the elephant calves detected had severe injuries from what appeared to be wire snares around the base of their legs. Additionally, adult elephants were photographed with trunk injuries and lacerations that appeared to have been caused by snares (Un *et al.*, 2018). In peninsular Malaysia, organized commercial hunting gangs, primarily from Viet Nam and Cambodia, use large cable snares to target tigers and other large high-value species (such as the mainland clouded leopard [*Neofelis nebulosa*] and the Malayan sun bear [*Helarctos malayanus*]) which are now rare or locally extinct in parts of continental South-East Asia. Such hunting, also observed in Thailand, has been implicated in significant declines in tiger density in key Malaysian protected areas.

The examples described above highlight some of the impacts of snaring on threatened species in South-East Asia. However, snaring affects many more species and is estimated to impact species from 80% of families of South-East Asian land mammals (Supplementary Information Table 1). Many of these species, most notably ungulates and carnivores, have also been identified as amongst the highest risk mammal groups for zoonotic disease transmission. Wild pig (*Sus scrofa*) – a very commonly snared species in Cambodia, Lao PDR, and Viet Nam – has been found to host the greatest numbers of zoonotic pathogens of any species traded in Asian markets (Cantlay *et al.*, 2017). Masked palm civet (*Paguma larvata*) and Sunda pangolin (*Manis javanica*), both of which are often snared, have been identified as intermediary hosts for zoonotic disease transfers including SARS, coronaviruses and Sendai virus (Liu *et al.*, 2019). For this reason, addressing the snaring crisis is likely to reduce the probability of future zoonotic disease pandemics.

Solutions to the South-East Asian snaring crisis

Solving the South-East Asian snaring crisis requires multi-faceted and holistic approaches which enhance protected

area management and law enforcement, advocate for legislative reform, shut down illegal wildlife trade and reduce demand for wildlife meat in urban areas. To be impactful in mitigating the threat of snaring, solutions need to be strategically developed to ensure that there is an explicit link between economic or other incentives and cessation of snaring. Incentives need to be accompanied by enforced compliance mechanisms, including a higher probability of apprehension of offenders, a higher rate of successful prosecutions and a higher likelihood that prosecutions will result in the handing down of punitive sentences. The strongest impact will likely come from approaches that first analyse the situation (*e.g.* protected area, landscape *etc.*) and then develop context-specific, multifaceted solutions that identify and address the motivations for hunting using snares, as well as improving criminal justice systems.

Engaging with local communities

In many cases, it will be essential to develop strong partnerships with local communities to reduce wildlife crime and snaring (Lewis *et al.*, 2011; Eshoo *et al.*, 2018). Indigenous peoples and vulnerable communities can depend heavily on South-East Asia's ecosystems, natural resources and wildlife for their health, livelihoods and well-being. However, where hunting is undertaken for subsistence or home consumption, available studies suggest that other methods (*e.g.* dogs and sling shots in Cambodia; blow pipes and spears in Malaysia; dogs, bows or guns in Myanmar) are often preferred over snares (Coad *et al.*, 2019; Evans *et al.*, 2020; Loke *et al.*, 2020). Given the significant stake indigenous peoples and local communities have in the long term maintenance of ecosystem functions, food security and cultural traditions, they are integral partners in any effective strategy to reduce snaring. These groups also have considerable influence over the landscapes they inhabit, which are more likely to overlap with the biodiverse areas which are most threatened by snare use (Garnett *et al.*, 2018). In general, conservation and anti-snaring strategies

“In many cases, it will be essential to develop strong partnerships with local communities to reduce wildlife crime and snaring.”

“To effectively address the South-East Asian snaring crisis, the relevant legislation in all countries needs to be strengthened.”

will be more efficient with the informed consent and support of such groups. The recognized rights of indigenous peoples often include the right to hunt on their lands using traditional and culturally preferred means. Such rights should be protected. However, use of snares should be clearly distinguished from traditional hunting methods when defining the scope of these unique rights in order to protect the forests and ecosystems that people depend on. Precautions must also be taken to prevent the commercial sale and trade of wildlife from indigenous lands.

Constraints to law enforcement

The primary current response to the South-East Asian snaring crisis is the removal of snares by patrol teams: a relatively easy and non-controversial activity. Unfortunately, huge piles of destroyed snares do not necessarily represent conservation success. Whilst removing snares does directly remove a threat to wildlife, in order for this to be effective snares must be removed at a higher rate than they can be set by hunters. The high volume of snares still being retrieved from the region's protected areas ([Table 1](#)) suggests this approach alone is insufficient. Given low staffing levels, the size of many protected areas, and the low detection probability of snares, only a small proportion of snares within an area can realistically be removed by patrols. Patrol strategy is often either too reactive (meaning ranger teams only go where threats are known to be highest) or too routine (meaning that ranger teams always patrol the same routes). In fact, one of the most significant deterrents to would-be offenders has been shown to be perceived risk of apprehension (Milner-Gulland and Leader-Williams, 1992). This requires every part of a given protected area to have some non-zero probability of being patrolled, at random intervals, even if this probability is extremely low, as will be inevitable with such large areas and limited resources. Rangers also rarely encounter people in the act of setting snares so it is difficult to identify perpetrators and ensure any punitive action is taken, particularly given

that current legislative loop-holes mean penalties are insufficient (see below) and wildlife crime is often regarded as a minor issue by prosecutors (Nijman, 2017). Snares are also so cheap that they are easily replaced by poachers when removed by rangers, meaning this activity does not act as a strong deterrent for future snaring activities. All these factors mean that the overall impact of rangers removing snares is too low to entirely remove the threat posed to wildlife by snares. We therefore recommend that governments and civil society organizations do not depend on ranger patrols alone to reduce snaring sufficiently, and that these approaches need to be combined with a stronger judicial system and a high likelihood that those who are apprehended face appropriate penalties.

Legislative reform

To effectively address the South-East Asian snaring crisis, the relevant legislation in all countries needs to be strengthened. We analysed the legal prohibitions on snaring in each of eight large biodiverse countries in South-East Asia ([Supplementary Information Table 2](#)). This exercise highlighted a number of significant shortcomings, including that only one country (Malaysia) legally defines what constitutes a snare; only two countries (Malaysia and Viet Nam) guarantee a serious minimum penalty for any type of hunting by snares within a protected area; and only two countries (Malaysia and Thailand) explicitly prohibit the possession of snares in protected areas. None of the laws in the region include provisions that clearly prohibit the possession of materials (like metal wires or nylon ropes) that can be quickly fashioned into snares in protected areas. Based on these limitations, we provide a number of specific recommendations to strengthen anti-snaring legislation in [Table 2](#).

Given the importance of areas outside protected areas for wildlife conservation in South-East Asia (Edwards *et al.*, 2011) there is a strong argument for an outright ban on snaring and a universal prohibition of snares as dangerous weapons. Whilst snaring is often used in the region by

farmers in the vicinity of their villages as a crop guarding mechanism (*i.e.* to prevent wild animals eating cultivated plants – see Coad *et al.* [2019]) these snares are still indiscriminate, and can kill many non-target (including endangered) species. Other means of preventing, or compensating for, crop damage by wildlife should be actively promoted.

Adequate prosecution and conviction rates for snaring crimes are also essential. This element speaks to the deterrent effect, for even strong laws will do little to prevent poaching if the poacher is aware that those laws are rarely enforced by certain links in the enforcement chain (including enforcement officers, prosecutors and judges). Indeed, problems in appropriately applying and consistently realizing penalties called for in wildlife protection laws often outweigh shortcomings in the content of the laws themselves (Wellsmith, 2011; Nijman, 2017). Efforts should be made to use additional legislation, beyond wildlife laws, to target wildlife traders and middle-men who are purchasing snared animals. These can include laws related to organized crime and money laundering. To understand the degree to which this is currently a problem – and to set out the strategy needed for improvements – all South-East Asian countries should track prosecution and conviction rates for wildlife crimes, including snaring crimes specifically. There is also a need for communicating increased legal penalties for snaring following any legislative reform. Any deterrent effect from new laws will be of little value if the contents of those laws are not widely communicated to those who they would most affect. Beyond the deterrent effect, it is also an issue of fundamental fairness. It would be highly unjust for a person to face drastically increased consequences if there was little attempt to communicate changes in wildlife laws. This communication can be done through multiple channels, including but not limited to posters, newspaper and social media ads, community meetings and television and radio announcements.

Table 2. Recommended legislative changes to strengthen judicial response to snaring.

Legislative change	Justification
Adjust minimum and maximum sentences and fines for snaring and snare possession. These should be set at a level that will provide a significant deterrent effect, even to well-financed commercial wildlife traders.	With half of the countries assessed having wildlife laws that are more than a decade old, it should be recognized that the threat posed by snares is clearer and more pressing than it would have been when those laws were originally drafted. Given that hunting is now conducted largely for commercial purposes, people who snare will often have significant financial backing. As such, it will be necessary for newly legislated fines and imprisonment periods to be adequate to deter such individuals.
Add provisions that would define snare possession or use as an attempt to hunt the most protected class of species that could be caught inside the protected area where its use was intended.	Snares are an indiscriminate hunting method and snares set for 'common' species can kill and maim Asian elephants, tigers, saola, and other highly protected species. It is a major oversight in current laws that those using snares must be caught red-handed with these species to face serious charges.
Introduce clear legal prohibition on possession of snares in protected areas. This prohibition should also extend to non-authorized personnel in possession of materials that can be quickly converted into snares within the boundaries of protected areas. This should include bans on the possession of wire and metal cables of all types, and in the absence of a clear legitimate use, bans on the possession of rope and nylon rope in quantities that could be converted into snares.	This is important given the improbability of catching a poacher in the act of setting a snare or retrieving an animal from a previously set snare. By criminalizing the possession of materials used to make snares within protected areas, it will be easier for enforcement rangers to deter poachers.
Introduce laws that include strict liability provisions that place the burden of proof on the possessor of snares, or materials that can be used to make snares, and ensure adequate search and seizure powers for officials working within protected areas.	Illegal hunting of wildlife is rarely effectively prosecuted in South-East Asia, with legislative loop-holes often used to acquit offenders. Proactively addressing such issues is likely to strengthen cases against wildlife offenders.

Behaviour change

Conservation biologists are increasingly recognizing that Social and Behaviour Change Communications (SBCC), techniques widely used in the health and development sectors, could help to achieve conservation goals (Veríssimo, 2013; Shairp *et al.*, 2016). Such approaches, developed from the literature surrounding social marketing

and psychology, have been used to reduce demand for a range of goods, from electricity and water, to habit-forming drugs through (a) directly or indirectly changing the price of the good or its substitutes, and/or (b) influencing one or more non-price drivers such as the emotional reasons behind purchasing a product. A recent review of environmental SBCC projects found strong evidence that education, prompts and feedback interventions will result in positive behaviour change (Thomas-Walters *et al.*, 2020). We recommend the development of focussed SBCC programmes in key urban markets to reduce the consumption of wildlife meat. This will require

- 1 surveys to understand the scope and extent of wildlife meat consumption across South-East Asia to support the design of cost-effective SBCC campaigns;
- 2 development of location and consumer segment specific behaviour change modelling frameworks to address critical wildlife meat consumers across South-East Asia;
- 3 development of marketing frameworks in partnership with professional marketing and advertising agencies; and
- 4 role-out of marketing programmes together with robust monitoring and evaluation of campaign reach and impact on consumer behaviour choice. Robust baselines are also critical in order to understand the impact and results of behavioural change programmes.

Conclusion

Snares, whilst simple in construction, are having a devastating impact on South-East Asian wildlife. Demand from urban consumers in the region for wildlife meat, parts and products has dramatically increased in recent years, driving the spread of industrial-scale snaring (Sandali *et al.*, 2016). Only a small proportion of hunting may be done for the subsistence of hunters and their families, with most snaring undertaken to supply this urban demand and associated markets and restaurants (Shairp *et al.*, 2016; Gray *et al.*, 2018; Belecky and Gray, 2020). Unless the

South-East Asian snaring crisis is solved, many of the region's iconic species are likely to follow the tiger and the Javan rhino (*Rhinoceros sondaicus*) to local extinction (Brook *et al.*, 2014; Rasphone *et al.*, 2019). To effectively address the drivers of snaring, governments and civil society organizations in the region urgently need to improve the effectiveness of anti-poaching patrols generally, and specifically strengthen legislation to allow law enforcement officers and rangers to deter snaring within protected areas. Robust and evidence-based behaviour change programmes to reduce commercial demand for wildlife meat should simultaneously be developed. ■

Acknowledgments

This study was supported by WWF Singapore, WWF Tigers Alive Initiative, WWF Greater Mekong, and the ASEAN Centre for Biodiversity. Michael Alexander, Simon Attwood, Stuart Chapman, and Tristan Tremschnig assisted with research and the development of the project and manuscript. Thanks to Crispian Barlow, Hung Luong Viet, James Lourens, Khamkhoun Khounboline, Simon Mahood, Shariff Mohamad and Suwanna Gauntlett for assistance in collecting data on snare numbers, and to all the protected area managers and rangers tirelessly working in the field.

References

- Belecky M and Gray TN (2020) *Silence of the Snares: Southeast Asia's snaring crisis*. WWF International. Available at <https://is.gd/9ioKEL> (accessed February 2021).
- Benítez-López A, Alkamade R, Schipper AM *et al.* (2017) The impact of hunting on tropical mammal and bird populations. *Science* **356**: 180–3.
- Brook SM, Dudley N, Mahood SP *et al.* (2014) Lessons learned from the loss of a flagship: The extinction of the Javan rhinoceros *Rhinoceros sondaicus annamiticus* from Vietnam. *Biological Conservation* **174**: 21–9.
- Cantlay JC, Ingram DJ and Meredith AL (2017) A review of zoonotic infection risks associated with the wild meat trade in Malaysia. *EcoHealth* **14**: 361–88.
- Coad L, Lim S and Nuon L (2019) Wildlife and livelihoods in the Cardamom Mountains, Cambodia. *Frontiers in Ecology and Evolution* **7**: 296.
- Duckworth JW, Batters G, Belant JL *et al.* (2012) Why South-East Asia should be the world's priority for averting imminent species extinctions, and a call to join a developing cross-institutional programme to tackle this urgent issue. *SAPIENS: Surveys and Perspectives Integrating Environment and Society* **5**: 77–95.

“Snares, whilst simple in construction, are having a devastating impact on South-East Asian wildlife.”

- Edwards DP, Larsen TH, Docherty TD *et al.* (2011) Degraded lands worth protecting: The biological importance of Southeast Asia's repeatedly logged forests. *Proceedings of the Royal Society B: Biological Sciences* **278**: 82–90.
- Eshoo PF, Johnson A, Duangdala S and Hansel T (2018) Design, monitoring and evaluation of a direct payments approach for an ecotourism strategy to reduce illegal hunting and trade of wildlife in Lao PDR. *PLoS One* **13**: e0186133.
- Evans TS, Myat TW, Aung P *et al.* (2020) Bushmeat hunting and trade in Myanmar's central teak forests: Threats to biodiversity and human livelihoods. *Global Ecology and Conservation* **22**: e00889.
- Garnett ST, Burgess ND, Fa JE *et al.* (2018) A spatial overview of the global importance of Indigenous lands for conservation. *Nature Sustainability* **1**: 369–74.
- Gray TN, Prum S, Pin C and Phan C (2012) Distance sampling reveals Cambodia's Eastern Plains Landscape supports the largest global population of the Endangered banteng *Bos javanicus*. *Oryx* **46**: 563–6.
- Gray TN, Hughes AC, Laurance WF *et al.* (2018) The wildlife snaring crisis: An insidious and pervasive threat to biodiversity in Southeast Asia. *Biodiversity and Conservation* **27**: 1031–7.
- Groenenberg M, Crouthers R and Yogaland K (2020) *Population Status of Ungulates in the Eastern Plains Landscape* (Technical Report). Srepok Wildlife Sanctuary and Phnom Prich Wildlife Sanctuary, Cambodia. WWF Cambodia, Phnom Penh, Cambodia.
- Harrison RD, Sreekar R, Brodie JF *et al.* (2016) Impacts of hunting on tropical forests in Southeast Asia. *Conservation Biology* **30**: 972–81.
- Hughes AC (2017) Understanding the drivers of Southeast Asian biodiversity loss. *Ecosphere* **8**: e01624.
- Ibbett H, Milner-Gulland EJ, Beale CM *et al.* (2020) Experimentally assessing the effect of search effort on snare detectability. *Biological Conservation* **247**: 108581.
- Krishnasamy K and Zavagli M (2020) *Southeast Asia: At the heart of wildlife trade*. TRAFFIC, Southeast Asia Regional Office, Petaling Jaya, Selangor, Malaysia. Available at <https://is.gd/5XQpy5> (accessed February 2021).
- Leung B, Hargreaves AL, Greenberg DA *et al.* (2020) Clustered versus catastrophic global vertebrate declines. *Nature* **588**: 267–71.
- Lewis D, Bell SD, Fay J *et al.* (2011). Community Markets for Conservation (COMACO) links biodiversity conservation with sustainable improvements in livelihoods and food production. *Proceedings of the National Academy of Sciences* **108**: 13957–62.
- Lindsey PA, Romañach SS, Tambling CJ *et al.* (2011) Ecological and financial impacts of illegal bushmeat trade in Zimbabwe. *Oryx* **45**: 96–111.
- Liu P, Chen W and Chen JP (2019) Viral etagenomics revealed Sendai virus and Coronavirus infection of Malayan pangolins (*Manis javanica*). *Viruses* **11**: 979.
- Loke VP, Lim T and Campos-Arceiz A (2020) Hunting practices of the Jahai indigenous community in northern peninsular Malaysia. *Global Ecology and Conservation* **21**: e00815.
- Loveridge AJ, Sousa LL, Seymour-Smith J *et al.* (2020) Evaluating the spatial intensity and demographic impacts of wire-snare bush-meat poaching on large carnivores. *Biological Conservation* **244**: 108504.
- Milner-Gulland EJ and Leader-Williams N (1992) A model of incentives for the illegal exploitation of black rhinos and elephants: Poaching pays in Luangwa Valley, Zambia. *Journal of Applied Ecology* **29**: 388–401.
- Mudumba T, Jingo S, Heit D and Montgomery RA (2020) The landscape configuration and lethality of snare poaching of sympatric guilds of large carnivores and ungulates. *African Journal of Ecology* DOI: 10.1111/aje.12781.
- Nijman V (2017) Orangutan trade, confiscations, and lack of prosecutions in Indonesia. *American Journal of Primatology* **79**: 22652.
- Noss AJ (1998) The impacts of cable snare hunting on wildlife populations in the forests of the Central African Republic. *Conservation Biology* **12**: 390–8.
- O'Kelly HJ, Rowcliffe JM, Durant S and Milner-Gulland EJ (2018) Experimental estimation of snare detectability for robust threat monitoring. *Ecology and Evolution* **8**: 1778–85.
- Rasphone A, Kéry M, Kamler JF and Macdonald DW (2019) Documenting the demise of tiger and leopard, and the status of other carnivores and prey, in Lao PDR's most prized protected area: Nam Et-Phou Louey. *Global Ecology and Conservation* **20**: e00766.
- Risdianto D, Martyr DJ, Nugraha RT *et al.* (2016) Examining the shifting patterns of poaching from a long-term law enforcement intervention in Sumatra. *Biological Conservation* **204**: 306–12.
- Rostro-García S, Kamler JF, Ash E *et al.* (2016) Endangered leopards: Range collapse of the Indochinese leopard (*Panthera pardus delacouri*) in Southeast Asia. *Biological Conservation* **201**: 293–300.
- Rostro-García S, Kamler JF, Crouthers R *et al.* (2018) An adaptable but threatened big cat: density, diet and prey selection of the Indochinese leopard (*Panthera pardus delacouri*) in eastern Cambodia. *Royal Society Open Science* **5**: 171187.
- Sandalj M, Treydte AC and Ziegler S (2016) Is wild meat luxury? Quantifying wild meat demand and availability in Hue, Vietnam. *Biological Conservation* **194**: 105–12.
- Shairp R, Veríssimo D, Fraser I *et al.* (2016) Understanding urban demand for wild meat in Vietnam: Implications for conservation actions. *PLoS One* **11**: e0134787.

“Robust and evidence-based behaviour change programmes to reduce commercial demand for wildlife meat should simultaneously be developed.”

- Tilker A, Abrams JF, Mohamed A *et al.* (2019) Habitat degradation and indiscriminate hunting differentially impact faunal communities in the Southeast Asian tropical biodiversity hotspot. *Communications Biology* **2**: 1–11.
- Tilker A, Long B, Gray TN *et al.* (2017) Saving the saola from extinction. *Science* **357**: 1248.
- Tilker A, Nguyen A, Abrams JF (2020) A little-known endemic caught in the South-east Asian extinction crisis: The Annamite striped rabbit *Nesolagus timminsi*. *Oryx* **54**: 178–87.
- Timmins RJ, Duckworth JW, Robichaud W *et al.* (2016) *Large-antlered Muntjac*: *Muntiacus vuquangensis*. The IUCN Red List of Threatened Species 2016: e. T44703A22153828. Available at <https://is.gd/u4ueOg> (accessed February 2021).
- Timmins RJ, Hedges S and Robichaud W (2020) *Saola*: *Pseudoryx nghetinhensis*. The IUCN Red List of Threatened Species 2020: e. T18597A166485696. Available at <https://is.gd/HK3okh> (accessed February 2021).
- Thomas-Walters L, McCallum J and Montgomery R (2020) A systematic review of conservation efforts using non-monetary, non-regulatory incentives to promote voluntary behaviour change. *SocArXiv Papers*. Available at <https://osf.io/preprints/socarxiv/6dhaf/> (accessed February 2021).
- Un ES, Nasak C, Hang C *et al.* (2018) Camera trapping in the Cardamom Mountain Landscape, Cambodia, reveals Asian elephant calves with severe injuries from wire snares. *Oryx* **52**: 409–15.
- Veríssimo D (2013) Influencing human behaviour: an underutilised tool for biodiversity management. *Conservation Evidence* **10**: 29–31.
- Wellsmith M (2011) Wildlife crime: The problems of enforcement. *European Journal on Criminal Policy and Research* **17**: 125–48.

Supplementary information

Supplementary Information Table 1. Terrestrial mammal families in South-East Asia impacted by the snaring crisis.

Family	English Name	Species in South-East Asia	Target for snaring	By-catch from snaring
Muridae	Mice, rats, gerbils	300	x	x
Cricetidae	Hamsters, voles, lemmings	4	x	x
Sciuridae	Squirrels	94	x	x
Spalacidae	Bamboo rats	4	x	x
Hystriidae	Porcupines	7	x	x
Diatomyidae	Laotian rockrat	1	x	x
Soricidae	Shrews	67	—	x
Erinaceidae	Hedgehogs	7	—	x
Cercopithecidae	Monkeys	45	x	x
Hylobatidae	Gibbons	17	—	x

Supplementary Information Table 1. *Continued.*

Family	English Name	Species in South-East Asia	Target for snaring	By-catch from snaring
Tarsiidae	Tarsiers	10	—	x
Hominidae	Great Apes	3	—	x
Bovidae	Cattle	17	x	x
Cervidae	Deer	23	x	x
Suidae	Pigs	12	x	x
Tragulidae	Chevrotain	6	x	x
Moschidae	Musk Deer	2	x	x
Mustelidae	Weasels–Martens	18	—	x
Felidae	Cats	11	x	x
Canidae	Dogs	5	?	x
Herpestidae	Mongoose	6	x	x
Viverridae	Civets	13	x	x
Mephitidae	Stink Badgers	2	—	x
Ursidae	Bears	2	x	x
Prionodontidae	Linsang	2	—	x
Ailuridae	Red Panda	1	—	x
Leporidae	Rabbits	6	x	x
Ochotonidae	Pikas	2	?	?
Tupaïidae	Tree Shrews	20	x	x
Rhinocerotidae	Rhinoceros	2	x	x
Tapiridae	Tapirs	1	?	x
Manidae	Pangolins	3	x	x
Elephantidae	Elephants	1	—	x

Supplementary Information Table 2. Analysis of the legislation controlling snaring in eight South-East Asian countries.

Disclaimer: the analysis was limited to laws released at the national level only. Furthermore, there is a possibility that additional laws, regulations or guidelines that were not identified here have some role in the control of snaring activities.

	COUNTRY							
	Cambodia	Indonesia	Lao PDR	Peninsular Malaysia ¹	Myanmar	Philippines	Thailand	Viet Nam
Main controlling legislation	Law on Forestry, 2002; Law on Natural Protected Areas, 2008	Act of Republic of Indonesia No.5/1990 on Conservation of Living Resources and Their Ecosystems	Wildlife and Aquatic Law, No. 07	Wildlife Conservation Act, 2010	The Conservation of Biodiversity and Protected Areas Law (The Pyidaungsu Hluttaw Law No 12/2018)	Wildlife Resources Conservation and Protection Act; National Integrated Protected Areas System (NIPAS) Act of 1992 (Republic Act No. 7586)	Wildlife Preservation and Protection Act B.E. 2562 (2019); National Park Act B.E. 2562 (2019)	Criminal code No100/2015/QH1; Decree No. 06/2019/ND-CP on Management of Endangered, Precious and Rare Forest Plants and Animals and Implementation of CITES; Decree 35/2019/ND-CP
Most recent update of primary controlling legislation	2008	1990	2007	2010	2018	2001	2019	2015 and 2019
Does law mention snares by name?	NO	NO	NO	YES	NO	NO	NO	YES ²
Does law mention traps by name?	YES	NO	YES	YES	NO	NO	YES	YES
Are either 'snare' or 'trap' defined in the law?	NO	NO	NO	YES	NO	NO	NO	NO
Is the use of snares in protected areas prohibited under law?	YES Snaring falls under 'hunting'	YES Snaring falls under 'catch, injure, kill'	YES Snaring falls under 'hunting'	YES	YES Snaring falls under 'hunting' ³	YES Snaring falls under 'hunting' and 'collecting' ⁴	YES Snaring falls under 'hunting'	YES

¹Different wildlife protection statutes are in force in Sabah (*Wildlife Conservation Enactment 1997*) and Sarawak (*Wildlife Protection Ordinance 1998*). These laws are generally viewed as weaker than the Wildlife Conservation Act, 2010 (see Krishnasamy and Zavagli (2020)).

²Although not in the law itself, Resolution 05/2018/NQ-HĐTP which guides the interpretation of the relevant criminal code provision (234) clarifies that: "Using prohibited hunting tools or equipment means use of weapons, poisonous arrows, explosives, toxins, tunnels, pits, plugs, big traps, trapping plugs, electric traps, anchor traps, large iron teeth, or other dangerous tools and equipment prohibited from use for hunting by the competent authorities" (our emphasis). Note however, that the term 'prohibited hunting tools' used here, does not match the term 'banned hunting equipment' used in the criminal code.

³Hunting means "any method used to harm, catch or kill wildlife. This definition includes transporting wildlife without permission".

⁴'Snaring falls under 'hunting' in section 20(a) of the *National Integrated Protected Areas System (NIPAS) Act* and 'collecting' in the *Wildlife Resources Conservation and Protection Act*.

Supplementary Information Table 2. Continued.

	COUNTRY							
	Cambodia	Indonesia	Lao PDR	Peninsular Malaysia ¹	Myanmar	Philippines	Thailand	Viet Nam
Are there minimum penalties for 'trapping / snaring' inside a Protected Area? [minimums for imprisonment and fines]	SPECIES DEPENDENT 1 year <i>and/or</i> 10 million Riels [~\$2,400] for hunting rare species (Law on Forestry) 100,000 Riels [\$24] (Law on Natural Protected Areas) 1 year <i>and/or</i> 15 million Riels [\$3,600] for vulnerable, rare, for critically endangered wildlife species (Law on Natural Protected Areas)	NO ⁵	SPECIES DEPENDENT 3 months – for prohibited category species only	YES ⁶ 50,000 ringgit [~\$11,500] 100,000 ringgit [~\$23,000] for the hunting of nine species afforded highest protection	YES 300,000 kyats [~\$200] <i>and/or</i> jail time upon conviction 3 years for hunting a 'completely protected animals'	YES These vary based on protection category: <i>hunting unprotected species</i> – 10 days and 5,000 peso [~\$100] <i>hunting critical species</i> – 2 years and 30,000 pesos [~\$600] <i>killing unprotected species</i> – 6 months and 10,000 pesos [~\$200] <i>killing critical species</i> – 6 years and 100,000 pesos [~\$2,000]	SPECIES DEPENDENT 3 years <i>and/or</i> 300,000 bhat [~\$9,500] for preserved (rare) wild animals	YES From 6 months to 3 years or from 50,000,000 VND to 300,000,000 VND [~\$12,800]
Snare use prohibited outside protected areas	PARTIAL for rare and endangered species only	PARTIAL for protected animals only	PARTIAL for prohibition category species only	YES	PARTIAL for all classes of protected wild animals <i>and</i> for any animal without license	PARTIAL without permit or protected classes of species	PARTIAL for all preserved or protected wild animals	PARTIAL Some prohibition on snare use in other forest types (<i>e.g.</i> production forests) ⁷ and prohibited in natural forests
Possession of snares prohibited in protected areas	NO	NO	NO	YES	NO	NO	YES ⁸	NO
Possession of materials that can be used to make snares prohibited in protected areas	NO	NO	NO	NO	NO	NO	NO ⁹	NO

¹Under Indonesian law only maximum sentences are defined. For snaring offences involving the capture or killing of a protected animal these would be "imprisonment up to a maximum of 5 years and a fine up to a maximum Rp. 100 million".

²Note that imprisonment is also stated as mandatory for these offences but no minimum timeframe is stated.

³As specified through Decree no No.156/2018/ND-CP on enforcement of a number of articles of the law on forestry.

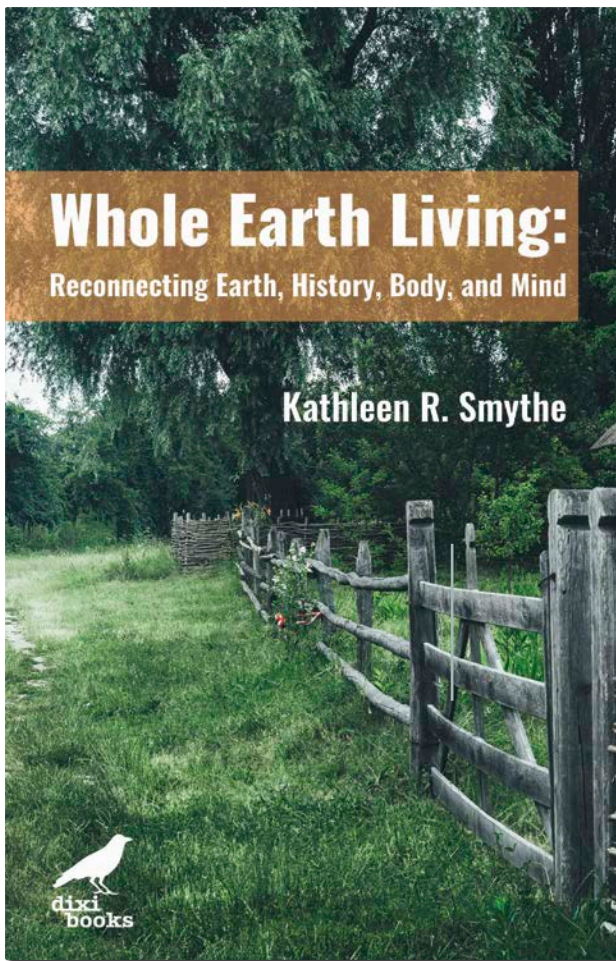
⁴National Park Act B.E. 2562 (2019) Section 19 (7): "within the national park, no person shall take in any gear for hunting or catching animal or any weapon. Whoever acts in contravention of the provisions of Section 19 (7) shall be punished with a fine not exceeding 10,000 Baht" (our emphasis).

⁵This may depend on the interpretation of the term 'gear' in National Park Act B.E. 2562 (2019) Section 19 (7). No direct evidence of charges being brought against those possessing materials that could later be converted into snares was uncovered during this review.

NEW BOOK

Whole Earth Living: Reconnecting Earth, History, Body, and Mind

by Kathleen R. Smythe



This book uses long-term history, evolutionary biology, neuroscience and philosophy to develop a **new sustainability paradigm**. The paradigm focuses on opportunities for optimal human and ecological welfare by **reconnecting earth, history, body and mind**.

Whole Earth Living is a hopeful book. After establishing the losses, it suggests that there are **fundamental re-orientations** that humans as individuals and members of society can make that are **more hopeful** and **more meaningful** than some of the current formulations offered for a **sustainable future**.

"This is a book that is both bracing and tender, as Smythe finds ways to deal with harsh realities that are restorative. Whole Earth Living is recommended reading for those of us in industrial societies who are searching for more engaged ways to live today that can help create more options for the future."

Robert Jensen, Emeritus Professor, University of Texas at Austin

ISBN-13: 978-1-913680-01-5

www.dixibooks.com/categories/ecology/



Born free or life behind bars: The subtleties of African large carnivore conservation

Large carnivore numbers are dwindling across Africa and several of the continent's iconic species face imminent extirpation outside protected areas. The main drivers of this collapse are human-associated habitat loss and direct persecution, largely outside fenced wildlife reserves. Ongoing exploitation of carnivores and rapid human population growth and development in large parts of Africa calls into question the efficacy and longevity of many 'community-led' models being touted as solutions to conserving Africa's carnivore taxa. Decisive intervention is required to reverse the current decline, by way of evidence-based conservation management, enforcement of legislation and environmental education that teaches ethics over economics. The successful protection and connection of free-roaming and fenced large carnivore populations has the potential to create a range of collaborations across communities and borders and represents an opportunity for humanity to show that we are capable of truly valuing nature.

Endangered. Vulnerable. Vulnerable. Vulnerable. These are the International Union for Conservation of Nature (IUCN) Red List categories of four iconic members of Africa's large carnivore guild – African wild dog, lion, leopard and cheetah. The categories are an indication of the pressures acting on a species and therefore its risk of extinction, but the list also highlights current population trajectories. Not surprisingly, these are declining for all four species, in a trend now familiar for many of Africa's terrestrial carnivore taxa.

While this may come as a surprise to some, the collapse of Africa's carnivore populations has been evident for some time. Outside protected areas, carnivores face fragmented landscapes and are easy pickings for hunters and the illegal trade syndicates (Farris *et al.*, 2015). Localized pressure from legal hunting or poaching may also force individuals into sub-optimal habitat where their chances of survival are further diminished. This cycle rapidly results in catastrophic declines in large carnivores across the landscape. African wild dog have been eradicated from North and West Africa and severely depleted in the centre and north-east of the continent (Woodroffe and Sillero-Zubiri,

2020). Cheetah are now missing from more than 90% of their historic range, prompting a call from conservationists to downgrade the species from Vulnerable to Endangered on the Red List (Durant *et al.*, 2015; Durant *et al.*, 2016). Lions have undergone a dramatic range reduction leading to a Vulnerable listing (Bauer *et al.*, 2016), and populations in West and Central Africa are now considered to be at imminent risk of extinction (Riggio *et al.*, 2012). Similarly, the extensive range decline of leopards has led to it being reclassified as Vulnerable (Stein *et al.*, 2020) and there is a distinct possibility that soon even this most adaptable of predators will only exist in fenced conservation areas.

In fact, most of the planet's large carnivores are experiencing geographic range contraction and an increased risk of extinction (Wolf and Ripple, 2018). The global loss of large carnivores at landscape scales has long been considered from a predation aspect, but there is now ample evidence showing the direct influence of these taxa on natural processes such as disease control, carbon sequestration and invasive species (Estes *et al.*, 2011). Put more simply, the disappearance of the highest trophic level spells disaster for all life on Earth, including ourselves. There is also a

Tarik Bodasing

About the authors

Tarik is a landscape ecologist and naturalist who has spent most of his adult life working in African wildlife conservation.

Citation

Bodasing T (2021) Born free or life behind bars: The subtleties of African large carnivore conservation. *The Ecological Citizen* 4: 143–8.

Keywords

Conservation; human–wildlife coexistence; protected areas; rewilding

“The challenge for conservationists, and for society, is to try to reverse the current downward spiral, and to shift current perceptions of these species from that of ‘dangerous wild beast’ to functionally critical components of the ecosystem, and archetypal symbols of wilderness.”

moral debate centred on the fundamental value of these species in nature. The challenge for conservationists, and for society, is to try to reverse the current downward spiral, and to shift current perceptions of these species from that of ‘dangerous wild beast’ to functionally critical components of the ecosystem, and archetypal symbols of wilderness. This can only be achieved by addressing two of the main drivers of decline, namely habitat loss and direct persecution (Galvez *et al.*, 2018).

An examination of long-term environmental and biological data reveals a mix of good and bad in this respect. Encouragingly, there has been a substantial increase in global protected area coverage over the course of the last few years (United Nations Environment Programme, 2019) and although driven largely by momentum in the marine sector, is evidence that certain parts of the world are committing to conservation at the highest level. Conversely, land use change and the loss of natural habitat is accelerating in many biodiversity-rich regions (*e.g.* South America and West Africa) and it is estimated that 93,000 km² of forest has been lost or transformed last year alone (Global Forest Watch, 2020). This has obvious repercussions for biodiversity loss. Rates of biodiversity decline in Africa (65%) and South America (94%) are particularly high, with the two standout drivers again being habitat loss and species overexploitation (WWF, 2020).

Fenced in or free: What does the evidence tell us?

In carnivore conservation circles, the argument often rages around fenced versus unfenced populations. This is because confined and free roaming carnivores have very different management objectives. In fenced protected areas where biodiversity conservation is the main objective, carnivores are primarily managed on their ecological impacts (Funston *et al.*, 2013). Breakouts are rare, and largely dealt with via lethal means, with the result being greatly reduced conflict with people (Mills, 1991). This combination of security, coupled

with a generally reliable distribution of prey often supports healthier and more stable carnivore populations. Lions in fenced protected areas are known to reach and maintain densities twice as high as their free roaming counterparts (Packer *et al.*, 2013) and leopard survival probabilities have been found to decrease substantially with time spent outside fenced reserves (Balme *et al.*, 2010).

When one considers the nature of land use outside formal protected areas it is easy to see why this is the case. These environments comprise a range of anthropogenic activities, some of which are simply not compatible with carnivore presence. The zero-tolerance approach to predators adopted by many livestock and game farmers in southern Africa is a prime example, and has led to local extirpations or suppressed population growth in several protected species (Gusset *et al.*, 2009; Pittman *et al.*, 2016). Despite this, it is estimated that significant numbers of cheetah and wild dog still exist outside conservation areas, often moving through these unprotected landscapes due to their spatial requirements (Durant, 2007).

Variation in operational costs represents another important area of difference. Packer and colleagues (2013) determined that the cost of managing lions at high densities in fenced protected areas averaged out at an annual budget of \$500/km². By contrast, free roaming lions cost significantly more to manage at \$2,000/km² per annum, to attain only half their potential density. This has strong implications for the financing of carnivore conservation in Africa, and across the globe. Securing long-term funding is extremely challenging to say the least, yet it is crucial to the sustainability of effective outcomes for large carnivores.

There is no doubting the inherent value of land outside protected areas for the future of large carnivores in Africa. What is in question is whether we can collectively make all the scattered pieces fit together before it is too late. It is estimated that half of free-roaming lion populations in Africa will be near extinction by 2050 (Packer *et al.*, 2013). It is also highly likely that free

roaming cheetah and wild dogs, which naturally exist at low densities (Durant, 2007), will not be far behind. Any successful management of carnivore species would therefore need to balance social, financial and ecological imperatives to develop an integrated approach (Funston *et al.*, 2013).

‘Sustainable sport hunting’? Ego meets conservation paradox

The hunting of large carnivores is a global industry and is often cited as a method of supporting the conservation of these species. The basic premise is that limited harvests are sustainable, with the objective to increase tolerance and funding for carnivore conservation (Ordiz *et al.*, 2013). Yet the sport hunting sector seldom raises more than \$1,000/km² as a land use (Lindsay *et al.*, 2012) and the question of increased tolerance for carnivores through hunting activities remains highly contentious.

What is clear is that the sector operates on a profit-based model, with little consideration given to carnivore ecology or their intrinsic value in the landscape. Loveridge and colleagues (2007) found that hunting on the borders of unfenced protected areas had a detrimental effect on lion populations, with 72% of tagged male lions that ventured outside the park boundary killed in ‘legal hunts,’ despite bait often being used as a lure. In the South African context, sport hunting is valuable to the economy, yet most of the revenue flows to the agricultural sector (Saayman *et al.*, 2018) and any benefit to the conservation of large carnivores is marginal at best.

International and national frameworks that allegedly regulate the sustainable removal of and trade in carnivores have also been called into question. Flaws have been found in the approach used by the Convention for International Trade in Endangered Species (CITES) in determining the annual hunting offtake for leopard in African states, with quotas based on non-robust data and lacking in scientific rigour (Trouwborst *et al.*, 2020). Government authorities are plagued by a lack of adherence to evidence-based protocols and many conservation departments across

Africa are thus complicit in the decline of large carnivores, through the unregulated issuing of hunting and ‘problem animal control’ permits. For instance, Namibia’s issuing of permits for legal hunts at a time of high lion mortality from human–wildlife conflict appears to have compromised the long-term viability of the desert-lion population (Stander, 2010). In this way, hunting quotas may often reflect pressure on governments to control carnivores rather than to conserve them (Packer *et al.*, 2009).

It is of grave concern that the above has taken place concurrent with the downgrading in conservation status of leopard and lion by the IUCN, and clearly highlights the need for a change in the way these systems operate.

The case for rewilding in Africa

Wolf and Ripple (2018) identified the most suitable areas for large carnivore rewilding across the globe based on species ecology, land use and areas of contiguous low human impact. The majority of these areas lie in large temperate northern hemisphere countries (USA, China, Mongolia, Canada, Russia) with Namibia and Mauritania the only two African countries on the list. A clear pattern emerges from the study – that regions with formalized protected areas, low human population densities and opportunities for expansion offer the best prospect for establishing and sustaining large carnivore populations in the future. Rewilding into unfenced areas may succeed but is strongly dependent on human population densities and the nature of activities (*e.g.* livestock farming or sport hunting versus neutral or conservation-friendly uses).

Large parts of Africa are witnessing an increased human footprint, as a result of rapid population growth and rates of consumption (WWF, 2020). This is coupled with an increase in livestock numbers – with several African nations now hosting over a million head of cattle alone (United Nations Food and Agriculture Organization, 2018). Severe land degradation and collapses in wild ungulate populations is common,

“Large parts of Africa are witnessing an increased human footprint, as a result of rapid population growth and rates of consumption.”

“Connectivity is also key for reintroduction success, with many protected areas across Africa becoming more isolated as a result of rapid human population growth and development.”

putting immense pressure on large carnivores (due to the potential for greater human–wildlife conflict), with major implications for their continued existence. Significantly, it has been shown that the intensity of unsustainable lion hunting is highest in countries with the most intensive cattle production (Packer *et al.*, 2009).

Connectivity is also key for reintroduction success, with many protected areas across Africa becoming more isolated as a result of rapid human population growth and development. Mean population growth on the boundary of protected areas has been found to be twice as high as growth across the rest of the rural landscape in Africa (Wittemyer *et al.*, 2008), highlighting the escalating threat faced from human encroachment, and the loss of buffer zones and potential corridors. The long-term success of reintroducing large carnivores is ultimately dependent on the availability of large tracts of unsettled land with healthy populations of suitable prey (Wolf and Ripple, 2018) and it is becoming exceedingly difficult to find areas in Africa that meet these criteria.

The communal conservancy model

Holistic initiatives that incorporate people and wildlife have been implemented at a national level by some African nations. Namibia’s Community-Based Natural Resource Management (CBNRM) approach is a particularly pioneering one, as it evolved during the colonial and apartheid eras. Conservation was dominated by a preservationist mindset, and large fenced wildlife reserves that excluded people such as the Kruger (1926) and Etosha (1907) National Parks were established during this period.

The premise of CBNRM is simple. Local landowners acquire conditional rights over wildlife through the formation of a conservancy that is approved by the state. Income is usually derived through partnerships with private companies, and activities centered around eco-tourism or sport hunting (Owen-Smith, 2010). However, more conventional activities such as livestock farming for profit often persevere. When the model works it ticks

all the boxes: money rolls in, communities are empowered, jobs are created, and both conservation and people benefit. But all that glitters is not gold, and despite the early successes, the model has floundered. A close inspection of annual income for around 80 Namibian conservancies (2010–15) reveals that roughly only 20% made a profit, with many generating no income at all. Such systemic failure can cause major rifts and destabilize the framework of a conservancy, leading to disillusionment with the whole approach.

One of the main drivers of this failure is human–wildlife conflict. Unfortunately, many conservancies simply failed to plan for the increase in carnivore populations that came with better protection. They were also unable to manage activities that were incompatible with wildlife conservation, such as livestock farming. The inevitable result was significantly increased rates of conflict with farmers, ultimately leading to retaliatory killings of carnivores. Stander (2010) notes that over a ten-year period, the primary cause of mortality in free roaming lions of the Kunene (Namibia) was via conflict with local communities. More recently, during my time in Namibia’s eastern conservancies (2016–17), I was provided with details on the illegal killing of leopard, cheetah, hyaena and at least two packs of African wild dog.

Such widespread and intensive hunting of predators under the guise of ‘problem animal control’ can only have one outcome. The irony is that the very same communities then suffer the financial implications of decreased tourism due to a lack of sought after predators, and a negative feedback loop is created. Compensatory payment schemes or livestock insurance can offer a temporary solution to appease farmers but are exceptionally cost heavy and administratively complex, and therefore not sustainable.

Is there a way forward?

All of this may lead one to think that the outlook for large carnivores is rather bleak, and indeed it is. The force of the collective pressures discussed above

means that very little breathing space remains for these charismatic species in Africa. The time for 'well-balanced' strategies and 'measured' approaches is now long past, and we need to act immediately and decisively if we are to reverse the current trends.

Addressing human–wildlife conflict through integrated approaches is critical. Community outreach programs should incorporate research findings and directly involve farmers in conflict reduction. Improved livestock husbandry and information on carnivore movements for instance, would help pastoralists avoid areas frequently utilized by carnivores (Kissui, 2008). The expansion of human populations on the boundaries of protected areas can also be harnessed for positive outcomes. Growth on protected areas edges is positively correlated with international donor investment and indicates the value of protected areas to local people in terms of job creation and revenue (Wittemyer *et al.*, 2008). These softer approaches also need to be reinforced by hard enforcement measures where necessary. The illegal killing of protected species is a recognized criminal offence and those involved (including farmers) should be charged and convicted accordingly.

Critically, interventions need to be tailored to the situation and implemented at the correct scale to ensure they are appropriate. The CBNRM approach may work in a country as sparsely populated as Namibia (where the population density is only 3 people/km²) yet even there, adaptation and constant management is crucial if it is to succeed. Alternative strategies are likely required in the more densely populated African countries (South Africa = 49/km²; Kenya = 92/km²; Malawi = 203/km²) where people are using every bit of land, right up to the protected area boundaries, and often within.

A beacon of hope in this regard are those exceptional programmes run by world class African NGO's such as Lion Guardians and Ewaso Lions in Kenya. These have succeeded in making coexistence possible, by engaging people and providing tangible (and sustainable!) benefits to communities

living alongside large carnivores as an incentive for conserving them.

The sport hunting industry needs to take responsibility for its current unbalanced effect on carnivore conservation and alter – or be forced to alter – specific policies. In tandem with this, state authorities need to place more emphasis on the intrinsic value of carnivores and enforce top-down regulation on the hunting industry to ensure compliance. Given the role of apex predators in ecosystem functioning, core 'safe' areas should be established within large landscapes where hunting is excluded (Ordiz *et al.*, 2013). The use of baits to lure carnivores should be banned, and 'no-take' buffer zones should be enforced around protected areas (Loveridge *et al.*, 2007). At an individual level, the removal of prime, dominant resident individuals must be avoided, as this has disproportionate ecological effects (Balme *et al.*, 2012; Ordiz *et al.*, 2013). The setting of quotas by states needs to be underpinned by scientific rigour and employ a precautionary and adaptive approach (Trouwborst *et al.*, 2020). Furthermore, regulatory bodies such as CITES should be regularly audited themselves to ensure cross-compliance and evidence-based decision making.

Ultimately, it appears that the conservation of nature comes with a price tag. This is nothing new, but it is sad to note that the only models being trialed are those that arise out of a concept of ownership and commodification of wildlife and wild spaces. Be it consumptive (sport hunting and poaching) or non-consumptive (ecotourism), carnivore conservation is dictated by the utilization of these species for economic gain in some shape or form. I believe that it is this very ideology that has got humanity and wildlife to this precarious position in the first place. The changes I have highlighted above would be fundamental in a system that first considered the ethics of carnivore conservation, rather than the economics of it. Perhaps the only real way forward is to embed nature-first principles in education and in wildlife conservation, and cultivate a new respect and awe for the species we occupy this planet with. ■

“Addressing human–wildlife conflict through integrated approaches is critical. Community outreach programs should incorporate research findings and directly involve farmers in conflict reduction.”

“Perhaps the only real way forward is to embed nature-first principles in education and in wildlife conservation, and cultivate a new respect and awe for the species we occupy this planet with.”

References

- Balme GA, Slotow R and Hunter LTB (2010) Edge-effects and the impact of non-protected areas in carnivore conservation: leopards in the Phinda-Mkhuze complex, South Africa. *Animal Conservation* **13**: 315–23.
- Balme GA, Hunter L and Braczkowski AR (2012) Applicability of age-based hunting regulations for African leopards. *PLoS One* **7**: e35209.
- Bauer H, Packer C, Funston PF *et al.* (2016) *Panthera leo*. The IUCN Red List of Threatened Species 2016. Available at <https://is.gd/x2vVAB> (accessed December 2020).
- Durant S (2007) Range-wide conservation planning for cheetah and wild dog. *Cat News* **46**: 13.
- Durant S, Mitchell N, Ipavec A and Groom R (2015) *Acinonyx jubatus*. The IUCN Red List of Threatened Species 2015. Available at <https://is.gd/kzmvZI> (accessed December 2020).
- Durant S, Mitchell N, Groom R *et al.* (2016) The global decline of cheetah *Acinonyx jubatus* and what it means for conservation. *Proceedings of the National Academy of the Sciences of the United States of America* **114**: 528–33.
- Estes JA, Terborgh J, Brashares JS *et al.* (2011) Trophic downgrading of planet Earth. *Science* **333**: 301–6.
- Farris ZJ, Golden CD, Karpanty S *et al.* (2015) Hunting, exotic carnivores and habitat loss: Anthropogenic effects on a native carnivore community, Madagascar. *PLoS One* **10**: 1–20.
- Funston PJ, Groom RJ and Lindsey PA (2013) Insights into the management of large carnivores for profitable wildlife-based land uses in African savannas. *PLoS One* **8**: e59044.
- Galvez N, Guillera-Aroita G, St John FAV *et al.* (2018) A spatially integrated framework for assessing socioecological drivers of carnivore decline. *Journal of Applied Ecology* **55**: 1393–1405.
- Global Forest Watch (2020) Interactive world forest map. Available at <https://www.globalforestwatch.org/map/> (accessed December 2020).
- Gusset M, Swarner MJ, Mponwane L *et al.* (2009) Human wildlife conflict in northern Botswana: Livestock predation by Endangered African Wild Dog (*Lycaon pictus*) and other carnivores. *Oryx* **43**: 67–72.
- Kissui BM (2008) Livestock predation by lions, leopards, spotted hyaenas, and their vulnerability to retaliatory killing in the Maasai steppe, Tanzania. *Animal Conservation* **11**: 422–32.
- Lindsay PA, Balme GA, Booth VR and Midlane N (2012) The significance of African lions for the financial viability of trophy hunting and the maintenance of wild land. *PLoS One* **7**: e29332.
- Loveridge AJ, Searle AW, Murindagomo F and Macdonald DW (2007) The impact of sport hunting on the population dynamics of an African lion population in a protected area. *Biological Conservation* **134**: 548–58.
- Mills G (1991) Conservation management of large carnivores in Africa. *Koedoe* **34**: 81–90.
- Ordiz A, Bischof R and Swenson JE (2013) Saving large carnivores but losing the apex predator? *Biological Conservation* **168**: 128–33.
- Owen-Smith G (2010) *An Arid Eden: A personal account of conservation in the Kaokoveld*. Jonathan Ball Publishers, Johannesburg, South Africa.
- Packer C, Kosmala M, Cooley HS *et al.* (2009) Sport hunting, predator control and conservation of large carnivores. *PLoS One* **4**: e5941.
- Packer C, Loveridge A, Canney S *et al.* (2013) Conserving large carnivores: Dollars and fence. *Ecology Letters* **16**: 635–41.
- Pittman RT, Fattebert J, Williams ST *et al.* (2016) The conservation costs of game ranching. *Conservation Letters* **10**: 403–13.
- Riggio J, Jacobsen A, Dollar L *et al.* (2012) The size of savannah Africa: A lion's (*Panthera leo*) view. *Biodiversity Conservation* **22**: 17–35.
- Saayman M, van der Merwe P and Saayman A (2018) The economic impact of trophy hunting in the South African wildlife industry. *Global Ecology and Conservation* **16**: e00510.
- Stander P (2010) *The impact of male-based mortality on the population structure of desert-adapted lions in Namibia*. Internal Research report. Available at <https://is.gd/vNAfs1> (accessed December 2020).
- Stein AB, Athreya V, Gerngross P *et al.* (2020) *Panthera pardus*. The IUCN Red List of Threatened Species 2020. Available at <https://is.gd/NvHe48> (accessed December 2020).
- Trouwborst A, Loveridge AJ and Macdonald DW (2020) Spotty data: Managing international leopard (*Panthera pardus*) trophy hunting quotas. *Journal of Environmental Law* **32**: 253–78.
- United Nations Environment Programme (2019) *Protected Planet: The World Database on Protected Areas*. Available at <https://www.protectedplanet.net/en> (accessed December 2020).
- United Nations Food and Agriculture Organization (2018) *Africa sustainable livestock 2050*. Available at <https://is.gd/oJOlaH> (accessed December 2020).
- Wittemyer G, Elsen P, Bean WT *et al.* (2008) Accelerated human population growth at protected area edges. *Science* **321**: 123–6.
- Wolf C and Ripple WJ (2018) Rewilding the world's large carnivores. *Royal Society of Open Science* **5**: 172235.
- Woodroffe R and Sillero-Zubiri C (2020) *Lycaon pictus*. The IUCN Red List of Threatened Species 2020. Available at <https://is.gd/Zrfp4h> (accessed December 2020).
- WWF (2020) *Living Planet Report 2020: Bending the curve of biodiversity loss*. WWF, Gland, Switzerland.

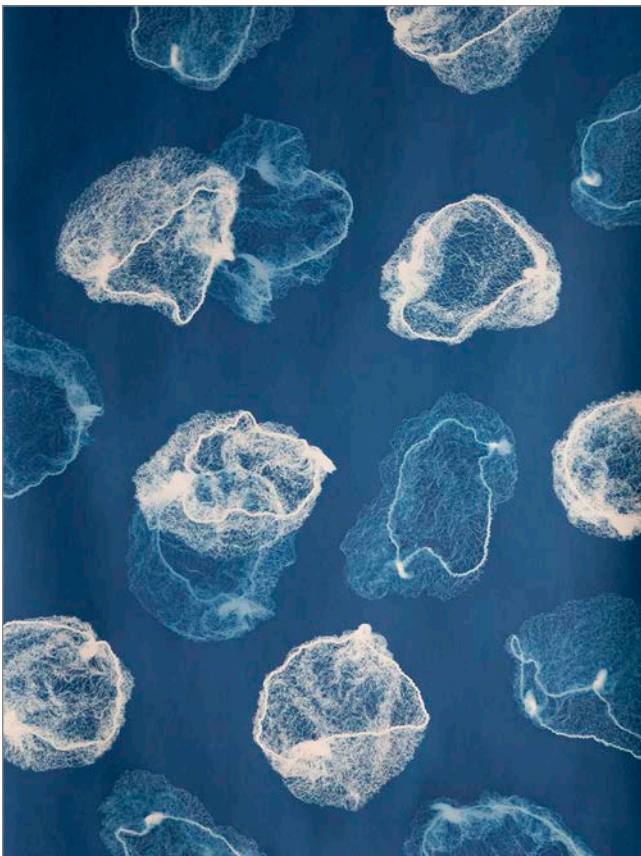
Seasick series

by **Andreas Scholz**

From the artist: The idea of compiling a record of plastic waste occurred to me during recent visits to the Middle East, where, confronted by the widespread coastal pollution found in the region, I began to take stock of what has become a global – and increasingly alarming – issue. Exploring the visible, psychological and ecological impact of plastic waste led me to conceive my project 'Seasick'. During recent beach clean-ups, I conducted some initial field research and collected marine plastic debris. I then recorded and documented my findings using cyanotype, an alternative photographic process that produces dark-blue prints and which enabled me to use a low-tech method of mass reproduction with a low environmental impact. While the subject matter is not new, I decided to make it more resonant by establishing further conceptual links – for example, by using only seawater to develop my prints. This process allowed me to produce a series of images in which a range of ghostly absences seemingly float in a vast open sea.

Higher-resolution version: <https://is.gd/ecoartwork>









The post-COVID landscape: A chance to end the use of threatened wild animals in traditional Chinese medicine?

Triggered by the emergence of COVID-19, public and political attention to the health and biodiversity risks of commercial trade in wild animals have led to substantive policy changes in China relating to the breeding and trade of wild animals as food. However, to date, new restrictions do not impact upon the use of wild animals in traditional Chinese medicine (TCM), despite the fact that demand for species currently used legally in TCM, such as pangolins, leopards, saiga and bears, continues to drive illegal trade and threaten wild populations. The cultural, political and institutional contexts in which TCM trade and consumption occur pose complex challenges to reducing this demand. Nonetheless, discussion of wildlife trade policy has seen a wide range of stakeholders in China, including lawmakers, academics, NGOs and medical experts, call for further policy amendments to end the use of threatened wild animal species in TCM. Commentators and campaigners globally should recognize this heterogeneity of opinion and work to support these efforts, which are crucial for establishing conditions in which demand for threatened species can be reduced.

The emergence of COVID-19 and its suggested links to trade in wild animals triggered waves of debate in China and worldwide over the biodiversity and public health risks of commercial wildlife trade and appropriate policy responses to mitigate these risks. Latterly, these debates have formed part of discussions of green recovery and stimulus packages as an opportunity to realize a less destructive and exploitative relationship with the natural world. There is growing recognition that human activities including habitat destruction, industrial livestock farming and commercial trade in wild animals are creating conditions that increase the likelihood of zoonotic disease emergence.

Following widespread media coverage of reports linking the emergence of SARS CoV-2 in late 2019 to a market in Wuhan where wild animals were sold, policy responses in China were swift. An initial temporary (albeit ill-defined) ban on trade in wild animals “in any form” in January 2020 (State Administration for Market Regulation, Ministry of Agriculture and Rural Affairs and National Forestry and Grasslands Administration, 2020) was

followed in February by a prohibition on commercial breeding and trade in almost all species of terrestrial wild animal for consumption as food (National People’s Congress of the People’s Republic of China, 2020). This represents possibly the most significant policy change relating to wildlife trade adopted by any government since COVID-19, especially given that commercial use of wild animal species as food in China was estimated in 2016 to be worth US\$18 billion, employing 6.3 million people (Wang *et al.*, 2020).

Also in February 2020, the Chinese Government announced that the Wildlife Protection Law, the country’s most important piece of legislation on conservation and trade of wild animals, was to be revised that year in order to “intensify efforts to crack down on and punish wanton and excessive hunting and eating of wild animals” (Ministry of Natural Resources of the People’s Republic of China, 2020).

However, the prohibitions adopted in February covered only use of terrestrial wild animals for consumption as food. Aquatic species were not covered under the ban, leaving space for continued trade in threatened species including various

Aron White

About the author

Aron is a Wildlife Campaigner and China Specialist at the Environmental Investigation Agency. He holds a degree in Chinese Studies from the University of Cambridge, and has lived and studied in Beijing and Taipei.

Citation

White A (2021) The post-COVID landscape: A chance to end the use of threatened wild animals in traditional Chinese medicine? *The Ecological Citizen* 4: 153–8.

Keywords

Biodiversity; conservation; traditional Chinese medicine; wildlife trade

“While the majority of medicinal ingredients used in TCM are derived from plants, wild animal products are still listed in the Chinese state pharmacopoeia.”

turtles and amphibian species. Nor did the ban cover breeding and trade for non-food purposes, such as fur, pets, ornamental items or traditional Chinese medicine (TCM). A draft revision of the Wildlife Protection Law, published in October 2020 for public comment, consolidates the prohibition on food consumption and strengthens elements relating to law enforcement and sentencing, but continues to permit commercial use of even threatened and protected wild animal species for non-food purposes, including TCM (Environmental Investigation Agency, 2020c).

Ongoing legal trade in threatened wild animal species for use in TCM

While the majority of medicinal ingredients used in TCM are derived from plants, wild animal products are still listed in the Chinese state pharmacopoeia (Chinese Pharmacopoeia Commission, 2020) and are used as ingredients in processed medicines sold in pharmacies and TCM hospitals. Species in legal trade include the critically endangered saiga antelope (*Saiga tatarica*) and Chinese pangolin (*Manis pentadactyla*), as well as the leopard (*Panthera pardus*) and Asiatic black bear (*Ursus thibetanus*), both assessed as vulnerable by the International Union for Conservation of Nature (IUCN), and musk deer (*Moschus* spp.), of which various species are assessed as endangered or vulnerable.

The persistence of such legal trade is of concern from both biodiversity and animal welfare perspectives. With the exception of some populations of musk deer, international trade in wild-sourced specimens of the aforementioned species is prohibited by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), to which China is a party, in recognition of the threat commercial trade poses to the species' survival. In the case of leopard bone, saiga horn and pangolin scales, the Chinese Government claims that the products in legal TCM trade derive from verified stockpiles, but a lack of transparency around the origins and management of

these stockpiles has led to serious concerns that legal trade mechanisms could be enabling the laundering of poached and trafficked specimens, while serving to legitimize medicinal use of the products in general (Environmental Investigation Agency *et al.*, 2019; Environmental Investigation Agency, 2020a; 2020b). Meanwhile, poaching and trafficking of these species to China for TCM use continues; for example, in December 2020, seventeen individuals were convicted in Hunan Province following the seizure of products including 940 saiga horns, pangolin scales, musk and bear bile (China News Hunan, 2020).

In the case of bear bile and musk, the products in legal use in China are supposed to derive from captive individuals. The legality of medicinal use of tiger bone is ambiguous, but a government notification from 2018 suggests that farmed tiger bone may be used in TCM in certain circumstances (State Council, 2018). Many commentators have expressed concern that legal trade from captive or farmed wild animals frequently does not relieve pressure on wild populations of the species (*e.g.* Tensen, 2016), in some cases due to consumer preference for the wild-sourced product, which may be perceived as more effective or authentic. This is seemingly borne out by the worsening conservation statuses of species which are legally farmed in China and continuing trafficking of their parts to consumer markets in China. Moreover, farming bears for their bile has been widely condemned within and outside China given the dire welfare implications of live bile extraction and husbandry conditions (*e.g.* Maas, 2000).

Possible reasons for differing approaches to medicinal and non-medicinal use

The contrast between the ambition and precautionary approach demonstrated by the Chinese Government's near-comprehensive ban on trade in terrestrial wild animals for consumption as food versus a continuing intransigence regarding use of even highly threatened species in TCM raises questions about the priorities and influences at work

in decision-making circles. At the same time, it is important to recognize the broad range of stakeholders in China who have publicly called for an end to commercial exploitation of threatened wild animals for medicinal use.

Fundamental differences between different forms of consumption are a likely reason behind divergent approaches. Beliefs in the medical efficacy of TCM treatments are long-standing and culturally ingrained (Cheung *et al.*, 2020). However, the fact that ivory carving, a practice which had previously received government protection as a form of intangible cultural heritage (Gao and Clark, 2014), was banned in China in 2017 demonstrates that decision-makers will not invariably prioritize cultural heritage over ecological and reputational concerns. Nonetheless, proposals to amend medical treatments in which belief in efficacy is strongly held are arguably fundamentally different to those impacting on only luxury or ornamental use.

TCM as a whole receives patronage from the highest levels of government. President Xi Jinping has on multiple occasions emphasized TCM as an important element of China's healthcare system and international influence (Gan and Xiong, 2020). International development of TCM as a cultural export is also one of the objectives of Xi's flagship Belt and Road Initiative (Hinsley *et al.*, 2020).

Against this backdrop, criticism of TCM has arguably been politicized by certain stakeholders in China. This is perhaps best exemplified by amendments to Beijing municipal regulations on TCM proposed in June 2020 (since dropped following widespread criticism) which could have criminalized perceived 'slander' of TCM (Sun and Ju, 2020). In 2016, Li Fei, a member of China's National People's Congress Standing Committee, China's highest law-making body, claimed that "some of the foreign organizations working in wildlife protection are big pharmaceuticals, and use wildlife protection to suppress the development of Chinese medicine; political and commercial interests are behind them" (Lei, 2016). Evidently,

debate over TCM policy can have political implications.

Institutional culture within key government agencies also appears to be a significant factor in development of policy relating to medicinal use of wild animals. The National Forestry and Grasslands Administration (NFGA) is the key government agency tasked with managing conservation of wild animals in China. The NFGA and its provincial branches are also responsible for permitting of trade in protected species. Support for commercial exploitation of wild animals, particularly for TCM, is long-standing and pervasive within the NFGA. For example, in a 2018 statement on "the healthy development of the rare animal medical industry," the NFGA pledged to ensure supply of wild animal ingredients to the TCM industry, including through captive breeding (National Forestry and Grasslands Administration, 2018). Subsequently, a 2020 guidance document issued by the NFGA following the February ban on breeding and trade for food consumption suggested that if farmers had been breeding a species for food which also has some medicinal utility, they should pivot their production to serve the medicinal industry (National Forestry and Grasslands Administration, 2020).

Recent calls from Chinese stakeholders to end use of threatened wild animals in TCM

While the lack of significant policy change relating to commercial use of threatened wild animal species in TCM suggests these likely influencing factors remain significant for now, voices calling publicly for change have been heard from multiple groups within Chinese officialdom and civil society.

Following the announcement in February 2020 that the Wildlife Protection Law was to be revised, various members of China's National People's Congress publicly recommended that changes be made to further restrict commercial use of wildlife. Lin Tengjiao highlighted how farming has not benefitted wild populations of bears or musk deer and that the medicinal industry

“It is important to recognize the broad range of stakeholders in China who have publicly called for an end to commercial exploitation of threatened wild animals for medicinal use.”

increases opportunities for the spread of animal viruses to humans (Zhang, 2020). Liu Hong recommended an end to all production and trade of wild animal products, and all breeding of wild animals for purposes other than research (Liaoning Daily, 2020), while Zhao Wanping was reported as having called for prohibition of captive breeding of wild animals (Zhu, 2020). Meanwhile, other delegates specifically called for medicinal use of wild animals to continue.

Many Chinese academics have publicly participated in debates around China's wildlife trade policy. In March 2020, five scholars from the Beijing Normal University School of Government wrote in a letter to the journal *Science* that "a total ban on the consumption of terrestrial wildlife alone is not enough to effectively protect public health from wildlife-associated diseases" and that "the traditional medicine industry would continue to threaten wildlife." Instead they called for financial support to be made available to help the wildlife farming industry "transition away from the production of traditional Chinese medicine" (Wang *et al.*, 2020). Commenting on suggestions developed with academic and NGO colleagues on the revised Wildlife Protection Law, Dr Lingyun Xiao of Xi'an Jiaotong-Liverpool University remarked, "even animals that have special state protection can be hunted in the wild if it's for national medicinal or medical production purposes. This is clearly outdated and needs to be deleted" (Pieterse, 2020).

Several Chinese NGOs have specifically called for greater restrictions on medicinal use of wild animals. For example, in November 2020 the SEE Foundation recommended that exemptions allowing for medicinal use of wild animals should be removed, noting controversy surrounding use of pangolins, tiger bone and bear bile; instead they recommend establishment of a 'white list' for species which can be used for medicinal purposes, developed with conservationists and experts (SEE Foundation, 2020). In an open letter to medical authorities in April 2020, the Capital Animal Welfare Association (CAWA)

commented on use of wild animal species in traditional medicine, noting concerns that official sanctioning of products such as bear bile legitimizes use of the product and impedes efforts to tackle illegal trade. CAWA stated that authorities should "choose to use substitutes" as "the only correct way to help TCM move with the times" (Capital Animal Welfare Association, 2020). Prior to this, several Chinese NGOs co-sponsored a motion to the IUCN World Conservation Congress which called upon members to support an end to use of threatened species in TCM and assist in development of sustainable alternatives (International Union for Conservation of Nature, 2019), although the language ultimately adopted by the Congress was considerably weaker.

Numerous TCM practitioners and academics have publicly stated that various wild animal products are no longer necessary in TCM. This is not new – for example, in 2010 the World Federation of Chinese Medicine Societies urged its members not to use endangered wildlife and stated that the industry should look for substitutes to tiger products (WWF, 2010). In 2020, Professor Wang Qi of the Beijing University of Chinese Medicine wrote that "the medicinal effects of wild animals are exaggerated" and that "relevant departments may want to consider amending [...] relevant laws to clearly prohibit the medicinal use of species under special state protection in medicine" (Wang, 2020). Scholars from the University of Hong Kong School of Chinese Medicine have proposed herbal alternatives to products such as bear bile (Feng *et al.*, 2009) and pangolin scales (Zhang, 2018), while former Director of the School, Professor Lao Lixing, has argued that using endangered animals is contrary to the fundamental principles of TCM (Standaert, 2020).

The way forward

Evidently, support for use of threatened species in TCM is far from universal among Chinese officialdom, academia, civil society or within the TCM community. It is important that commentators and campaigners recognize and reflect this

“Several Chinese NGOs have specifically called for greater restrictions on medicinal use of wild animals.”

heterogeneity of opinion, both to avoid homogenization of these groups and related potential for contributing to xenophobic and unjust narratives, and to encourage fruitful collaboration between those in different sectors with shared objectives. Efforts to end the use of threatened species in TCM are more likely to be effective if they respect rather than denigrate the tradition of TCM as a whole, and where possible work with experts and practitioners to develop and promote culturally acceptable alternatives to wild animal products (Cheung *et al.*, 2020).

If changes to policy and TCM practice relating to use of threatened wild animal species are to be achieved, these will be in large part due to the efforts of advocates in China. Those outside the country should carefully consider the challenges of such work and avoid unnecessarily politicizing discourse. Nonetheless, given the serious lack of transparency around current trade mechanisms and the conspicuous lack of progress to date, it is crucial that researchers within and outside the country play close and critical attention to policy developments and implementation, and continue to publish research on the reality of commercial exploitation of threatened species in TCM.

The emergence of COVID-19 and subsequent discourse has focused an unprecedented degree of public and political attention on the risks of the commercial wildlife trade, both in China and globally. Considerable appetite exists among the Chinese public for further changes: research conducted in February 2020 into public attitudes to trade and consumption of wildlife found that over 90% of respondents would support more stringent restrictions (Shi *et al.*, 2020). Given that, at the time of writing, revisions to China's Wildlife Protection Law are yet to be finalized, there remains a rapidly narrowing window of opportunity for further changes that could be instrumental in ending use of threatened wild animal species in TCM. Researchers and commentators in China and worldwide should continue to urge lawmakers to

extend the commendable precautionary approach applied to date to trade in wild animals for food consumption to other uses including TCM, particularly given the serious biodiversity risks inherent in continuing with the status quo. ■

References

- Capital Animal Welfare Association (2020) 致国家卫生健康委员会的一封公开信 [An open letter to the National Health Commission]. Available at <https://mp.weixin.qq.com/s/JKGxdrnqYaO3U25pOwz2yg> (accessed December 2020).
- Cheung H, Doughty H, Hinsley A *et al.* (2020). Understanding traditional Chinese medicine to strengthen conservation outcomes. *People and Nature* doi: 10.1002/pan3.10166.
- China News Hunan (2020) 快递单撕开野生动物“地下黑市”涉案2600余万元 [Courier slips uncover “underground black market” for wildlife, worth more than 26 million yuan]. Available at <https://is.gd/YQSUHw> (accessed December 2020).
- Chinese Pharmacopoeia Commission (2020) 中华人民共和国药典, 2020年版一部 [Pharmacopoeia of the People's Republic of China, 2020 edition, part 1]. Zhongguo yiyao Keji Chusheban, Beijing, China, 2020.
- Environmental Investigation Agency (2020a) *Bitter Pill to Swallow: China's flagrant trade in leopard bone products*. Available at <https://is.gd/oGABiz> (accessed December 2020).
- Environmental Investigation Agency (2020b) *Smoke and Mirrors: China's complicity in the global illegal pangolin trade*. Available at <https://is.gd/j5bRt2> (accessed December 2020).
- Environmental Investigation Agency (2020c) *EIA recommendations regarding 2020 revision draft of the Wildlife Protection Law*. Available at <https://is.gd/KEyClO> (accessed December 2020).
- Environmental Investigation Agency, Center for Biological Diversity and Humane Society International (2019) *Transfer Saiga Antelope to Appendix I*. Available at <https://is.gd/LoAjYk> (accessed December 2020).
- Feng Y, Siu K, Wang N *et al.* (2009) Bear bile: Dilemma of traditional medicinal use and animal protection. *Journal of Ethnobiology and Ethnomedicine* **5**: 2.
- Gan N and Xiong Y (2020) Beijing is promoting traditional medicine as a 'Chinese solution' to coronavirus. Not everyone is on board. *CNN*, 16 March. Available at <https://is.gd/REMxfj> (accessed December 2020).
- Gao Y and Clark S (2014) Elephant ivory trade in China: Trends and drivers. *Biological Conservation* **180**: 23–30.
- Hinsley A, Milner-Gulland EJ, Cooney R *et al.* (2020) Building sustainability into the Belt and Road Initiative's traditional Chinese medicine trade. *Natural Sustainability* **3**: 96–100.

“Efforts to end the use of threatened species in TCM are more likely to be effective if they respect rather than denigrate the tradition of TCM as a whole.”

“If changes to policy and TCM practice relating to use of threatened wild animal species are to be achieved, these will be in large part due to the efforts of advocates in China.”

- International Union for Conservation of Nature (2019) *Motion 108 – Adapting traditional medicine to fulfill the vision of ecocivilisation* (old version). Available at <https://is.gd/MaUPMT> (accessed December 2020).
- Lei C (2016) 死虎骨头能否利用? 全国人大常委会委员激辩 [Can the bones of dead tigers be utilized? Members of the National People's Congress Standing Committee debate]. *Shangguan News*, 27 April. Available at <https://is.gd/71QVVd> (accessed December 2020).
- Liaoning Daily (2020) 全国人大代表刘宏: 完善立法从源头防范公共卫生安全风险 [National People's Congress delegate Liu Hong: improve legislation to guard against public health risks at the source]. *Liaoning Daily*, 25 May. Available at <https://is.gd/YN7Ua7> (accessed December 2020).
- Maas B (2000) *The veterinary, behavioural and welfare implications of bear farming in Asia*. World Society for Protection of Animals, London, UK. Available at <https://is.gd/xaig7m> (accessed January 2021).
- Ministry of Natural Resources of the People's Republic of China (2020) *National People's Congress Standing Committee Legal Affairs Commission begins revision of Wildlife Protection Law*.
- National Forestry and Grasslands Administration (2018) “关于大力支持名贵动物药产业健康发展的提案”复文 (2018年第2015号) [Response to proposal regarding vigorously supporting the healthy development of the famous and valuable animal medicinal industry, Notification No. 2,015, 2018].
- National Forestry and Grasslands Administration (2020) 国家林业和草原局关于稳妥做好禁食野生动物后续工作的通知 [National Forestry and Grassland Administration Notification regarding reliable and proper follow-up work on the prohibition on eating wild animals]. Available at <https://is.gd/esQcqn> (accessed December 2020).
- National People's Congress of the People's Republic of China (2020) *Decisions of the Standing Committee of the National People's Congress relating to a total prohibition on illegal wildlife trade, eliminating the bad habit of excessive eating of wildlife, and effectively safeguarding the lives and health of the public*. Available at <https://is.gd/5TDSMA> (accessed December 2020).
- Pieterse P (2020) *Wildlife group submits suggestions for law revision*. Available at <https://is.gd/05XvkP> (accessed December 2020).
- SEE Foundation (2020) SEE基金会《野生动物保护法(修订草案)》的建议 [SEE Foundation recommendations regarding the Wildlife Protection Law (draft revision)]. Available at https://mp.weixin.qq.com/s/4_smpvK2Z_ebejw2c5KZ1A (accessed December 2020).
- Shi X, Zhang X, Xiao L *et al.* (2020) Public perception of wildlife consumption and trade during the COVID-19 outbreak. *Biodiversity Science* **28**: 630–43.
- Standaert M (2020) ‘This makes Chinese medicine look bad’: TCM supporters condemn illegal wildlife trade. *The Guardian*, 26 May. Available at <https://is.gd/nXchZT> (accessed December 2020).
- State Administration for Market Regulation, Ministry of Agriculture and Rural Affairs and National Forestry and Grasslands Administration (2020) *Notification regarding prohibition of trade in wild animals*.
- State Council (2018) *State Council Notification regarding strict control of management and utilisation of rhinoceroses, tigers and the products thereof*. Available at <https://is.gd/hgSloj> (accessed December 2020).
- Sun L and Ju Y (2020) Beijing drops plans to criminalize criticism of Chinese medicine. *Caixin*, 2 December. Available at <https://is.gd/mmmKgiG> (accessed December 2020).
- Tensen L (2016) Under what circumstances can wildlife farming benefit species conservation? *Global Ecology and Conservation* **6**: 286–98.
- Wang H, Shao J, Luo X *et al.* (2020) Wildlife consumption ban is insufficient. *Science* **367**: 1435.
- Wang Q (2020) 还有多少“穿山甲”需从药典除名 [How many more “pangolins” need to be removed from the pharmacopoeia?]. Available at <https://is.gd/d8MrGF> (accessed December 2020).
- WWF (2010) Chinese medicine societies reject tiger bones ahead of CITES. Available at <https://is.gd/WinxtZ> (accessed December 2020).
- Zhang K (2018) Consider alternatives to pangolin scales, traditional Chinese medicine professors urge at conservation conference in Hong Kong. *South China Morning Post*, 6 September. Available at <https://is.gd/2IGXfl> (accessed December 2020).
- Zhang K (2020) 加强药用野生动物养殖业监管 代表委员纷纷支招 [Delegates successively make suggestions for strengthening supervision and management of the medicinal wild animal breeding industry]. *Yicai*, 21 May. Available at <https://is.gd/RdTvU2> (accessed December 2020).
- Zhu N (2020) 用最严厉法律守护人民群众健康安全 [Use the strictest laws to protect public health and safety]. *Legal Daily*, 10 March. Available at <https://is.gd/6cs2FX> (accessed December 2020).

Sign up for content alerts at: www.ecologicalcitizen.net/#signup

Sounding out other species

All animals, including humans, employ methods of communication to convey meaningful and adaptively-significant information. These range from movement, eye contact, and scent-release to light displays and, of course, vocalizations. The human use of complex language is not the only resource available for animals to let others know what they need, want or plan. Yet we have no legally recognized mechanism to make use of these communications in order to represent other species in conflicts with us or in situations we've created that are critical to their lives. It is time to consider new ways of politically listening to animals, not only as a means of ensuring some measure of procedural justice but to refute the convenient claim that non-human animals have no voice.

What I hear first is heavy breathing like someone has just outrun a bear. I follow the sound down to my feet. There, in the grasses, is a large rabbit, struggling for air. It doesn't have to tell me what's wrong. I know by the way its eyes are crusted over like newly covered graves. It's got what we call 'myxy' – a nasty and fatal disease caused by the poxvirus, *Myxoma*. It produces swellings and lesions on the membranous parts of the animal, breathing difficulties and severe suppression of the immune system. Most rabbits die unpleasantly within two weeks of contracting the virus.

A few days later, after I'd been in the kitchen listening to the latest news on COVID-19, the disease caused by another pathogen, SARS-CoV-2 – but this one attacking the human world – I went outside to find that old rabbit, utterly blind now, grazing near its burrow. Our home is in the middle of a 10,000-acre managed forest in the north of England. We have no visible human neighbours, and the nearest public road is nearly three miles away. Who we see most often is this rabbit, or one of the many others that live around us. And they're not our only non-human neighbours. There are roe deer that graze our back field, who've left the temporary gift of one of their newborn for two years running now. There's a barn owl roosting nearby, who

hunts on our land like daylight's ghost. There are the mice and voles that make holes in our front lawn, and peer up at us as like tiny earthmen of Narnia, dwellers of the Underland (Lewis, 1953).

I've said 'our' a lot in these sentences but this land is theirs too. What we own officially in the human world forms the mental and physical territory of thousands of other beings in our midst. We live in a multispecies community. Our small human family is heavily outnumbered. There are nightjars. Tawnies and woodcocks. Goshawks nest close by. And that is to say nothing of the inconspicuous, whose lives are made secret by habit or habitat. The beetles that leave their larva in the warm layers of earth. The efts that shelter in our kids' sandpit. The earwigs and millipedes that seem gifted with the ability to walk through walls, turning up in the dark, neglected corners of my study. The moths that hibernate in the warm shadowed vents of the barn, hanging together like old clothes.

So, we knew this old rabbit a little. Normally, he would flip into the air like a sprung trap when we came outside, then disappear into the hole beneath the damson tree. On the day I found him still alive and grazing, he made no effort to run away, just moved blindly forward, pulled by the need for food. I watched him and spoke

Melanie Challenger

About the author

Melanie works as a researcher on environmental philosophy, and the history of humanity and the natural world. She is the author of – amongst other works – *On Extinction: How we became estranged from nature* and *How to Be Animal: A history of what it means to be human*.

Citation

Challenger M (2021) Sounding out other species. *The Ecological Citizen* 4: 159–62.

Keywords

Ecological empathy

“While we shelter from a virus we’ve brought on ourselves through our intensive exploitation of other species, this rabbit died because we deliberately infected his kind with a devastating pathogen.”

a few futile words to him. Two days later, I found him dead under the salvia bush a few feet from his home. And what I felt was shame. While we shelter from a virus we’ve brought on ourselves through our intensive exploitation of other species, this rabbit died because we deliberately infected his kind with a devastating pathogen.

It was the French physician and bacteriologist, Paul-Felix Armand-Delille who brought myxomatosis to his country and, in doing so, collapsed the rabbit populations across much of Europe (Bartrip, 2009). A specialist in malaria, he’d been inspired by the successful control of rabbits in Australia through *Myxoma* and, in 1952, decided to experiment with releasing it on his own estate in France. The virus escaped within a matter of months and, by the year’s end, nearly half of the wild rabbits of France were dead. Unsurprisingly, it wasn’t just rabbit populations that were affected by his decision. Predators that mostly filled their bellies with rabbits also began to decline, and this included the iconic Iberian lynx (Platt, 2011). It had been a catastrophic and callous decision, yet it existed within an internally logical and permissive ethical landscape.

Most often, our relationship with other species turns on whether we consume them or meet them in an environment as rivals of some kind. We can think of it as the ‘eat or compete’ logic. Even today, many view rabbits simply as a pest or as a meal. It takes little effort to find someone who will help get rid of a rabbit ‘infestation’. As a result of this framing, humans give themselves free rein to gas an entire burrow system. Or shoot rabbits for recreation. Or bait live traps. We can anticipate that once gene-edited methods of control become possible, these will be added to the toolkit. And so, it’s almost impossible for our societies to make sense of what might be wrong in the release of myxy – or, indeed, what might sadden us in the associated disappearance of the Iberian lynxes – while we continue to act from this ‘eat or compete’ logic. Yet many of us find our moral sentiments pulled in favour of these other animals when we look from their point of view. For

much of modern history, such an internal move has been belittled as ‘emotionalism’ or ‘anthropomorphism’. But we urgently need a fresh means of squaring up to the kinds of moral puzzles we now face.

It is generally accepted by people around the world that our actions are driving large-scale impacts on the rest of life on Earth. Climate change, biodiversity losses, coral bleaching – these kinds of events are in the daily news cycle. They are a part of our global psyche. And so, as cultural geographer Franklin Ginn has written of the current extinction crisis, “learning to live less destructively and more ethically with nonhumans is clearly a pressing task” (Ginn, 2014: 532). There’s a growing movement of people of all nations who recognize that we can’t continue with what GENIE co-founder, Joe Gray, and colleagues call a “single-species democracy” (Gray *et al.*, 2020). But there remains a stubborn refusal to think about animals on their own terms. We continue to talk collectively about ‘animals’ as if a species of orb spider is of a piece with a gorilla. We talk about ‘nature’ as if our duties to this seemingly homogenous *other* can be dealt with in concert. In this way, we continue to act as if other animals are somehow without being. And, as they have no being, they have no ethical weight in the societies of our planet. Their lives are light with meaninglessness, while our human lives are freighted with meaning. *Their* being is morally diaphanous, morally silent, whereas *our* being is thick with value. Yet history reminds us we can be woefully misled by false frameworks.

There was once a time when other animals were a part of our systems of justice. In Europe, throughout the middle ages and until only a few centuries ago, other beings could be tried and convicted as the perpetrators of crimes. Their cries or growls were offered as admissions of guilt or pleas of innocence. Most commonly it was domesticated animals that were imprisoned or executed: horses, cows, sheep, dogs. But pigs were the repeat offenders. EP Evans’ large study on the trials found that one pig was hanged in the fourteenth century for eating a church

wafer (Evans, 1906). There's more than a little irony in the fact that while other animals were thought to be in service to us because they lacked souls, they could only be punished because, like us, they possessed bodies that could be tortured. In other words, a Judeo-Christian framing meant that, for a long while, animals could be moral *agents* but never moral *subjects*. Only an entrenched belief in a biological hierarchy set by a Christian God prevented us from listening to other species properly or seeing that our own harmful actions against other species might also be viewed as criminal.

As Europe shifted towards secularism, at least in matters of jurisprudence, a strange reversal took place that holds to this day. Animals lost their moral agency but, in turn, they began to emerge as moral subjects. However, the emphasis on minimum thresholds of welfare have only been as significant as the animals' experiences appeared to be. Or, more truthfully, as we have been willing to allow them to appear to be, given the overwhelming cultural and economic impulse to continue utilizing them. There is only so much recognition of the feelings, intentions or agency of other species that can be tolerated. And almost no recognition of the staggering and relevant differences between what different kinds of animals might need or want. The reason we're stuck with this minimum of moral subjecthood is because we've not been looking from the perspective of other animals' centres of experience.

It is nearly a decade now since the Cambridge Declaration on Consciousness (Low, 2012). The headline that went around the world stated that "animals are conscious and should be treated as such". Scripted and signed by leading neuroscientists Philip Low, Christoph Koch and the late Jaan Panksepp, and witnessed by Stephen Hawking, the declaration was unequivocal in its findings: "non-human animals have the neuroanatomical, neurochemical, and neurophysiological substrates of conscious states along with the capacity to exhibit intentional behaviours" (Low, 2012). This was a landmark statement. Other animals,

these scientists confirmed, experience and express, in measurable ways, worlds of awareness and intention that should matter to us (if, by logic, our own worlds of awareness and intention matter). But what has followed from it? Well, surprisingly little. But there are signs of changes afoot.

In recent years, philosophers and social scientists concerned with democratic process have focused on forms of 'political listening' that encourage us to pay attention to the voices of those that will be affected by our political, economic and legal decisions. Might something similar be possible with other animals? In recent years, Alasdair Cochrane (2018) and Alfonso Donoso (2017) have argued independently for new methods of representing the interests of non-human animals. Something like the concept of political listening was put forward by John Dryzek (2000) as a potential way of acknowledging and addressing the needs of non-human animals. Of course, listening literally and 'aurally' is not the only means of openness to other species. Other kinds of behaviours and expressions can be 'listened to' in the figurative sense, through learning to recognize and interpret signals from other animals. This was suggested by geographer Catherine Johnston (2008), where she argued for a "responsible anthropomorphism" through proximity, observation, and, where relevant, working with other species.

Other species employ forms of imitation, light displays, movements, sounds, gesture, chemicals and scents to convey information to others. Each day, we are learning more about the significance and complexity of these expressions. In her recent book on animal languages, philosopher Eva Meijer (2019) demonstrates the "wealth of animal languages all around us" that can transform how we think about non-human animals. Meijer argues that the fear of anthropomorphism has led us to under-report what we can know from other animals. This has been compounded by a narrow understanding of what we mean by "language." Wittgenstein, she argues, gifted us the "concept of 'language games' – which refers to the entirety of language,

“Only an entrenched belief in a biological hierarchy set by a Christian God prevented us from listening to other species properly or seeing that our own harmful actions against other species might also be viewed as criminal.”

“It is through our natural gifts for interpreting the expressions of others that we enter their worlds and gather the information that gives us the opportunity to meet their needs. We trust this faculty as parents; why do we discount it as formal moral agents?”

individual language practices and very primitive artificial languages.” This concept, she writes, is more “appropriate to thinking about communication with animals as it does not give a fixed definition and is therefore suitable for studying a variety of linguistic actions” (Meijer, 2019: 44–5).

After reading Meijer’s book, I began to pay closer attention to rabbits. What struck me was the absence of the abstract, rational part of my human morality. What emerged through observing these animals running about after each other, avoiding dangers, seeking food, or just resting and looking into the distance, was the transparency of the uncountable motivations of their lives. What my mind responded to was not a rational calculation of feeling or interests but the observable movements of need. It reminded me of what parental attentiveness is like: the same rapid observation–interpretation of the unspoken needs and experiences of an infant. Of course, reasoning matters, but watching other animals properly is a reminder that moral interactions are a form of attention that is largely physical and instinctual. Reading these cues is the beginning of igniting our agency. It is through our natural gifts for interpreting the expressions of others that we enter their worlds and gather the information that gives us the opportunity to meet their needs. We trust this faculty as parents; why do we discount it as formal moral agents?

Anthrozoologist Margo DeMello (2010: 237) reminds us that:

The rabbit–human relationship is one of the most schizophrenic of all human–animal relationships. Rabbits have been sacrificed, hunted, bred, skinned, slaughtered, experimented on, and consumed; they have also been worshipped, cherished, and represented in countless myths, folk tales, children’s books, and pieces of art. But they have rarely been considered as intelligent beings worthy of psychological inquiry.

DeMello argues that rabbits vocalize on only very rare occasions, but that we

can see and learn to ‘read’ how rabbits communicate through their ears, their noses, their tails, their bodies. DeMello notes that rabbits “spend endless hours communing with each other – grooming, nuzzling, playing, ‘gossiping,’ or just hanging out.” She is talking about house rabbits here. But wild rabbits spend huge amounts of time in play too. And, by god, can they scream when they need to. The sound of a young rabbit in the jaws of a stoat is unmistakable. It’s like the whistle of a kettle that hasn’t been removed from the heat. Should we respond to its cry for help? Not necessarily. One of the burdens of attentiveness is also to understand who the message is for.

So, can we do some kind of ‘listening’ on a larger, and more formal scale? I am part of an international group of scholars who have come together during this pandemic to work on a kind of ‘animals’ jury’, which, it is hoped, will be a political form of attention and an instrument of deep listening to colour in the ‘who’ we are talking about when we talk about ‘animals’ or ‘nature’ or the ‘more-than-human’. It will be an effort to pay attention to signals of need and flourishing. It is early days for our group, but the hope is that a replicable method can be created for listening to other species and articulating, as best as possible, these lives that we are affecting. It’s only mechanisms like this that will enable us to see and hear other species properly in the public or political sphere, and thereby guide us in our relationships with them. It is only this kind of mechanism that might enable us to understand and formalize ahead of the act, whether releasing a deadly virus like *Myxoma* is the right thing to do.

There’s no question that it might be a threatening prospect to listen too closely to the lives of those we harm. But as we move forward with development projects, with large-scale conservation initiatives, and with frontier technologies like genome-editing and gene drives, it’s vitally important for our own moral integrity that we find a way to pay attention, both politically and compassionately, to the gestures, cues and articulations of the

other species around us. We may not like what they tell us. But that's the price of reason. ■

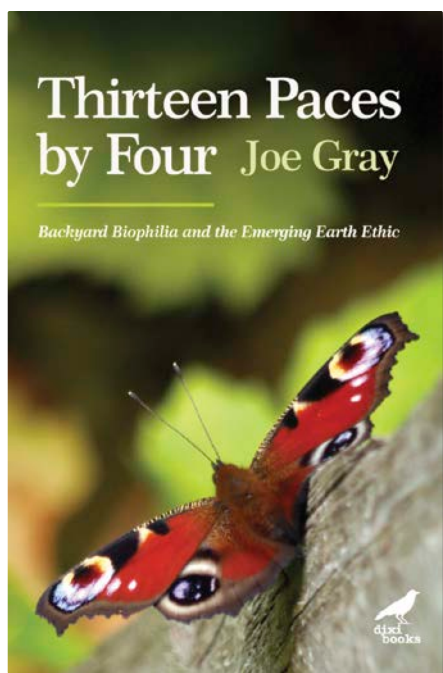
References

- Bartrip P (2009) The arrival, spread and impact of myxomatosis in Scotland during the 1950s. *The Scottish Historical Review* **88**: 134–53.
- Cochrane A (2018) *Sentientist Politics*. Oxford University Press, Oxford, UK.
- DeMello M (2010) Becoming rabbit: Living with and knowing rabbits. *Spring: A journal of archetype and culture* **83**: 237–52.
- Donoso A (2017) Representing non-human interests. *Environmental Values* **26**: 607–28.
- Dryzek J (2000) *Deliberative Democracy and Beyond*. Oxford University Press, Oxford, UK.
- Evans EP (1906) *The Criminal Prosecution and Capital Punishment of Animals*. William Heinemann, London, UK.
- Ginn F (2014) Sticky lives: Slugs, detachment and more-than-human ethics in the garden. *Transactions of the Institute of British Geographers* **39**: 532–44.
- Gray J, Wienhues A, Kopnina H and DeMoss J (2020) Ecodemocracy: Operationalizing ecocentrism through political representation for non-humans. *The Ecological Citizen* **3**: 166–77.
- Johnston C (2008) Beyond the clearing: Towards a dwelt animal geography. *Progress in Human Geography* **32**: 633–49.
- Lewis CS (1953) *The Silver Chair*. Geoffrey Bles, London, UK.
- Low P (2012) *Cambridge Declaration on Consciousness*. Available at <https://is.gd/PITlzc> (accessed February 2021).
- Meijer E (2019) *Animal Languages: The secret conversations of the living world*. John Murray Press, London, UK.
- Platt J (2011) Deadly rabbit disease may have doomed Iberian lynx. *Scientific American*, 12 July. Available at <https://is.gd/LsLbgw> (accessed February 2021).

Advertisement (placed at no charge)

NEW BOOK

Thirteen Paces by Four: Backyard Biophilia and the Emerging Earth Ethic



Triggered by the Covid-19 lockdown, the author, a passionate conservationist, finds himself drawing inspiration from goings-on in the **small back garden** of his terraced suburban house, an outdoor space that he has measured at **thirteen paces long by four paces wide**. Contemplating what a **love of nature** really means and implies, the author weaves a narrative of interlinked ideas that are integral to **humanity's positive cohabitation of Earth with the rest of life**.

"A lyrical mix of backyard naturalism, Do-It-Yourself rewilding, eco-philosophical exegeses, and reflections on 'the storm of now,' Joe Gray's work is a grounded meditation on how we can meet the present-day Earth calamity. Without a whiff of didacticism, Gray shows us how to listen, how to care, and how to discover the timeless joys of being Earth citizens. May humanity awaken to the love and awe that unassumingly flow from every page."

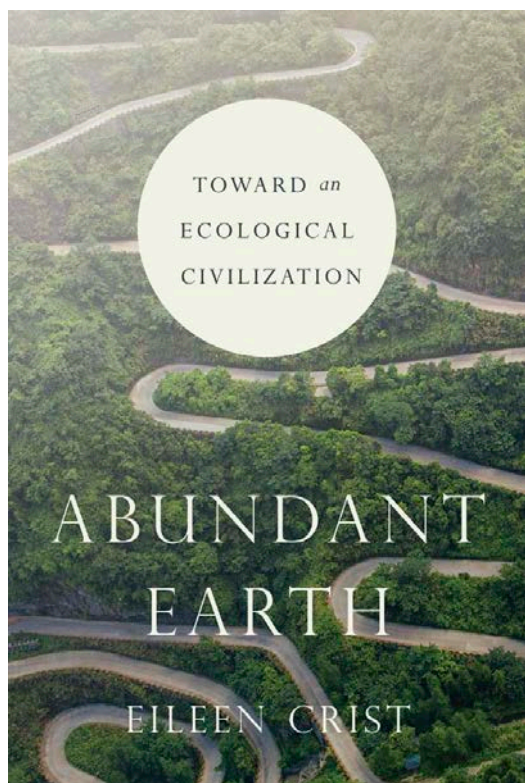
Eileen Crist, Associate Professor Emerita, Virginia Tech

ISBN-13: 978-1-913680-06-0 | www.dixibooks.com/categories/ecology/

ABUNDANT EARTH

TOWARD AN ECOLOGICAL CIVILIZATION

Eileen Crist



In *Abundant Earth*, Eileen Crist not only documents the rising tide of biodiversity loss, but also lays out the drivers of this wholesale destruction and how we can push past them. Looking beyond the familiar litany of causes—a large and growing human population, rising livestock numbers, expanding economies and international trade, and spreading infrastructures and incursions upon wildlands—she asks the key question: if we know human expansionism is to blame for this ecological crisis, how might we take steps to halt it? Crist urges us to confront the reality that humanity will not advance by entrenching its domination over the biosphere. On the contrary, we will stagnate in the identity of nature colonizer and decline into conflict as we vie for natural resources. Instead, we must chart another course, choosing to live in fellowship within the vibrant ecologies of our wild and domestic cohorts, and enfolding human inhabitation within the rich expanse of a biodiverse, living planet.

“*Abundant Earth* is a gem of a book. Eileen Crist clearly shows how essential it is for humans to appreciate that we’re just one species among many, to recognize that it’s high time that we deeply appreciate and embrace Earth’s biodiversity, and to understand that we’re not superior or ‘better’ than other animals. . . . Future generations surely will inherit a different planet. However, different

doesn’t necessarily mean a worse place to live if we reconnect with nature, rewild ourselves, and come to understand that we’re just one of a gang of many diverse beings, *all* of whom matter.”

—Marc Bekoff, author of *Rewilding Our Hearts: Building Pathways of Compassion and Coexistence* and *Canine Confidential: Why Dogs Do What They Do*

“No one has dealt with the issue of human supremacy and ‘the fate of the earth’ in the systematic and extensive manner that Crist does in this book. Her work is meticulous, systematic, thorough—and it is deeply provocative.”

—Lisi Krall, author of *Proving Up: Domesticating Land in US History*

Eileen Crist is associate professor in the Department of Science, Technology, and Society at Virginia Tech. She is the author of *Images of Animals: Anthropomorphism and Animal Mind* and coeditor of a number of books, including *Gaia in Turmoil: Climate Change, Biodepletion, and Earth Ethics in an Age of Crisis*; *Life on the Brink: Environmentalists Confront Overpopulation*; *Keeping the Wild: Against the Domestication of Earth*; and *Protecting the Wild: Parks and Wilderness, the Foundation for Conservation*.

288 pages | 3 halftones | 6 x 9 | ISBN-13: 978-0-226-59680-8 | © 2018

Paper Price: ~~\$35.00~~/\$28.00 | Discount Code: UCPNEW

To order online, please visit the University of Chicago Press at <https://bit.ly/2Pie5vr> and use keycode UCPNEW to apply the 20% discount code.



THE UNIVERSITY OF CHICAGO PRESS

Twelve acres

In June of 2019, my husband and I moved to rural California to live at the base of the Sierra Nevada mountains in the Sierra Foothills. It was a romantic notion. We were going to be living in wine country! We would grow grapes, make wine, and tend to a hearty vegetable garden. We would slow down. We bought twelve acres with an old farmhouse and barn on it. There were open fields and forested areas with pine trees as tall as skyscrapers, mature apple trees, and a few grape vines perfect for making jam. We named the property 'Verdania'.

When we first moved here from the Bay Area, there were two horses living on the property. Each morning I watched them grazing out my bedroom window. I loved it. Every afternoon I would take a break from work to feed them carrots I started buying for them at the store. Food is an excellent way to develop a relationship with just about anyone, including our non-human friends. The horses would come running over to chomp on their afternoon snack. I started to see their different personalities. One was shy and timid, sometimes a loner. Another was bossy and greedy, clearly the leader.

Not long after we moved in, the couple who owned¹ the horses brought over two more to help manage the vegetation as we approached wildfire season. We quickly learned that keeping the grass low was good fire prevention, and the horses were here to eat the grass. Essentially the animals were working on behalf of all of us who lived in the area. They grazed the fields, lived a good life, and the land we lived on was safer for it during wildfire season.

These majestic creatures are excellent weed whackers. They did such a good job that most of the land was dirt by August, which made it really dusty during the long,

dry summer months. But more importantly, the horses had eaten most of the vegetation on about ten acres of our property. They were no longer getting enough food, so we sent the horses home.

I was sad the horses were gone and I missed them, but there are many other animals that either live on our property or come passing through on their way to someplace else. As I walk the perimeter with my dog, Scout, I have spotted many wildlife trails – well-worn paths the local wildlife have walked over the years.

Deer are as common as the native Steller's jays in the foothills. The day we moved in, a doe and two fawns ran across our front yard and my heart leapt with joy. The young fawns were likely just weeks old. Those first few months were stressful though. As I would walk outside, I would often accidentally startle a family of deer who would bounce off towards the busy road. My heart would sink with worry that one would be hit by a car. It's common to see a deer dead on the side of the road. I wish people would drive at the speed limit and pay more attention. We have moved into the deer's territory, after all.

Over time, I worry less and enjoy watching them from afar as they graze in our backyard. I can often sneak a peek from my desk in the middle of the day. One day just weeks after we moved in, one of the does walked right up to our picture window in the front of the house where my cat, Loki, was sitting in a cat tree, safely inside. The doe was just a few feet away from Loki, very curious about this new being in the 'neighbourhood'. Loki, who is skittish at times, was surprisingly calm during this meeting. They gazed at each other for a few moments, and, just like that, the doe bounced off. I mean, do deer have springs

Christine Cook Mania

About the author

Christine studies Humane Education at Antioch University New England (NH, USA), in partnership with the Institute for Humane Education.

Citation

Cook Mania C (2021) Twelve acres. *The Ecological Citizen* 4: 165–7.

Keywords

Ecological living

“There was the morning my two domestic cats were staring out the screen door at a mountain lion watching them from about 150 feet away. And one late morning, my husband and I were working in the yard and spotted a bobcat observing us from the woods.”

in their legs? While it sure looks like they do, their legs are made of much of the same material as humans: bones, muscle, and ligaments. While we look so different from most other species, we all share much of the same DNA.

As you can see, even with the horses gone, I still spy some wonderful sights on these twelve acres. There was the time I let my dog out at dawn to see a Sierra Nevada red fox running in the back pasture with breakfast hanging out of her mouth. There was the morning my two domestic cats were staring out the screen door at a mountain lion watching them from about 150 feet away. And one late morning, my husband and I were working in the yard and spotted a bobcat observing us from the woods.

With all the beautiful trees around our house, we have the luxury of spying many amazing birds on a regular basis. Black-chinned and ruby-throated hummingbirds have flown within a few feet of my face. More than once, I have been sitting on the sofa looking out our picture window and a hummingbird has come right up to the glass, flapping her wings so fast, just to say hi, I think. I have also spotted western and mountain bluebirds, goldfinches, and woodpeckers, which are a dime a dozen in the trees around the house.

Living here involves all of our senses. Many nights I go to sleep to the sound of owls hooting. And, just the other day, I listened to songbirds play near the honeysuckle. There are also unwelcome smells – those unfortunate mornings when I wake up and know a skunk has come calling.

We also have frogs and lizards from spring to fall, sometimes making their way inside the house. We enjoy catching and returning them safely to the great outdoors.

Now there is one creature I haven't mentioned and yet plays an enormous role here at Verdania: the relentless California ground squirrel (*Otospermophilus beecheyi*). Who knew that this small, energetic creature would become our biggest nemesis?

Walking around the property can be quite dangerous – you just never know where you might stumble over a new burrow.

Apparently, these industrious creatures may share a burrow with other squirrels but like to build their own entrances. Even squirrels see themselves as individuals, just like us humans.

The squirrels are mostly herbivorous and live on nuts, seeds, grains, fruits and sometimes roots. And while I openly embrace and promote a herbivorous diet, this is exactly where the problem lies. They want to eat all our food. They eat the apples and walnuts from our trees with great abandon. They devour our tomatoes, making it fruitless even to plant the first seed come springtime. The walnut and apple trees were planted many years before I ever even visited the Sierra Foothills, so I wasn't attached to the harvest. But when we planted the fig and persimmon trees last fall, we used gopher baskets to protect the roots and installed fencing around each tree to protect them from the wildlife as if to say, “Mine! Stay away!”

Don't get me wrong. The squirrels aren't the only animals enjoying the fruit. Deer especially love the apples and grapes, not just the fruit but also the leaves, which basically incapacitates the plant, at least for that season. Jackrabbits expressed a lot of interest in our cucumber, melon, and zucchini plants. It's unclear who destroyed those plants: the rabbits or the squirrels.

While there are many ravagers of our fruits and vegetables, the squirrels are at the top of the list. I have talked to local farmers to see how we might solve this problem, but they claim they don't have ground squirrels. It seems the squirrels have traveled from all over for an indefinite stay on 'our' land because there are hundreds roaming and burrowing at any one time. They build a lot of burrows out in the pastures – some are so large, I have begun to wonder if a drug cartel is using the squirrels for its own purpose. They also build burrows around the house that lead under the foundations. This is more problematic than the squirrels eating the apples and nuts.

The squirrels' predators are rattlesnakes, eagles, foxes, badgers and weasels. Sounds like we need more foxes. I have researched ways to manage the squirrel population

on the property, and I have not found any acceptable methods. Research suggests we poison, place bombs in the burrows, shoot them with a gun, trap and kill, or use dogs to reduce the population. This is how country folk would handle the problem, and many would not blink an eye at any of these methods. As someone who has lived a vegan lifestyle for 16 years, I'm uncertain how to proceed because killing another being is not my MO.

You see, I have watched these squirrels. They remind me of kittens – playing with each other; rolling and romping around together. I've seen them fighting. From the kitchen window, I've watched them standing on their hind legs and using their two front paws to hold an apple as they take a few bites, then just toss it aside because they know there are many more apples to be had. When I walk outside, they scatter at the speed of light. They are fast little critters, just like kittens. If kittens matter – and they do – then I think these squirrels matter too.

When I lived in Richmond, CA, tree squirrels would yank plums from our tree, take one bite, and drop it on the ground. Perhaps the ripe plums were too sour for the squirrels, but it used to drive me mad. So wasteful, I would think. But over the years, I moved away from thinking that they were “stealing from my tree” to “why do I think it's my tree anyway?” I didn't even plant it.

My husband has labeled some of them “super squirrels” because they successfully jumped above the collars he installed on the apple trees to protect ‘his’ fruit, an unsuccessful effort. Squirrels definitely won that round.

This summer I gave up on growing a garden. It's not in my heart to kill these animals, and yet, we do need to figure out

a non-lethal solution to protecting the foundation of the house. I don't know what that is yet. I will continue to watch the squirrels to see if I can find any clues.

I still miss the horses. There was something about their presence that was comforting. Maybe because we had horses when I was growing up in Indiana. I also miss the horses because now I am tasked with mowing some of the grass that was growing higher than my knees by late spring.

However, I grew to love my time on the ride-on mower, cutting paths around the perimeter, so Scout and I had a place to walk in the evenings. While out mowing, I found another ecosystem within the tall grass. I spotted moles, frogs, lizards, very young squirrels and ladybugs. I had to go slow, and even then I suspect some creatures did not survive the mowing. We humans have developed so many amazing tools. We are smart, inventive, creative. And yet, oftentimes, we don't consider how we are affecting other animals that live among us. Our everyday actions affect their lives. In this case, horses are a better solution to keep the grass low.

Most of the time, it's easy to coexist with all of these sentient beings. It's even possible to form relationships with some of them. While we have a piece of paper that formally stakes our claim to this land – these twelve acres – do we really own it? Other animals live here too. Is it possible for us to share the land with the wildlife, so that we disrupt the ecosystem as little as possible? ■

Notes

- 1 Do we really *own* animals? I live with two adopted cats and one adopted dog. I consider myself their guardian.

“Is it possible for us to share the land with the wildlife, so that we disrupt the ecosystem as little as possible?”

Never miss an issue of *The Ecological Citizen*

Sign up for content alerts at: www.ecologicalcitizen.net/#signup

Reciprocity Mandala and Where We Stand is Holy: Liturgy for the Creation (series) by Amy Livingstone

About *Reciprocity Mandala* (below): *Reciprocity Mandala* is inspired by *Braiding Sweetgrass*, a book on indigenous wisdom, scientific knowledge and the teachings of plants by botanist and member of the Citizen Potawatomi Nation Robin Wall Kimmerer (2017; acrylic, 24 x 24 inches).

About *Where We Stand is Holy: Liturgy for the Creation* (following pages): Inspired by illuminated manuscripts, this series is a creation-centred interpretation of the Liturgy of the Hours that shines a light on endangered species and landscapes (2014–19; all acrylic, all 24 x 48 inches).

About the artist: Amy Livingstone, MA, founder of Sacred Art Studio (www.sacredartstudio.net), is an interdisciplinary visual artist and environmental activist. Her visionary art draws inspiration from ancient, mythic, and theological narratives to communicate our interconnectedness in the web of life and the sacredness of the earth.

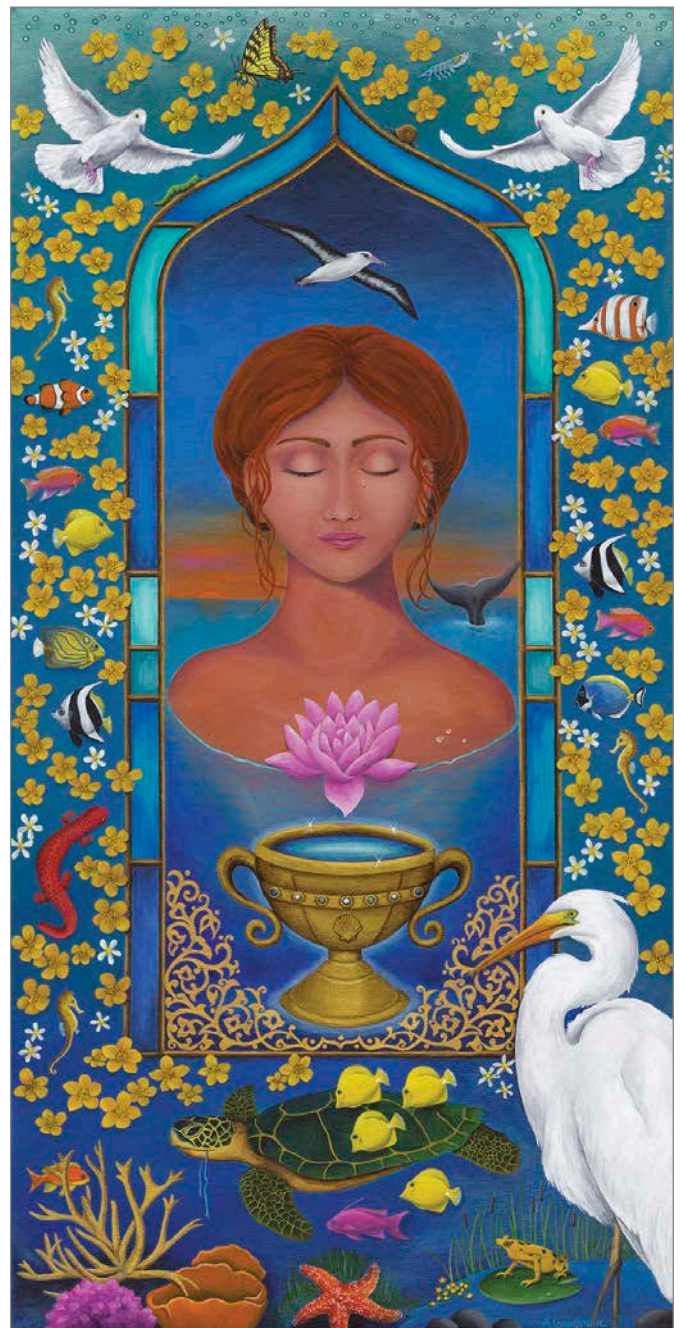
Higher-resolution version: <https://is.gd/ecoartwork>





Lauds: Prayer for the Birds

Vespers: Prayer for the Sacred Waters





Sext: Prayer for the Desert

Compline: Prayer for the Arctic



Poetry section

Life far exceeds humans. For millennia, ecopoets have understood it as a far greater enterprise. In their poetry, we can hear the voices of those who came before us and those who live alongside us. Now, however, they face extinction and die in silence, deafened by the roar of civilization. The time has come to renew the old understanding that all life, including humanity, speaks a common language. Thus, the mission of ecocentric poetry, or ecopoetry, is to help us empathize with non-human entities, be they a whale, a tree or a mountain. For we are all kin. Through metaphor and imagery, it speaks directly to our hearts and genes. We begin to realize that we have evolved together and share a common fate.

CLASSIC POETRY

The Death of Wolf

Alfred de Vigny

I

*The clouds were covering the blazing moon,
As if it smoldered in the pool of fume;
The blackened trees were stretching to horizon,
We marched through moist and damp in silence,
Through thickly heather and the prickly growth;
When under fir-trees, on the sandy earth,
We noticed trails of two great wolves we chased,
And held our breath and briskly stopped amazed,
Listening intently to the boughs and mead
Lest we should miss a rustle of their tread.
The only sound – the whining weathercock –
Was from a castle on a mountain rock,
Dispatched by winds in heavens' lofty spheres,
Yet barely touching solitary spires,
And crests of oaks that leaned upon the cliff,
And seemed asleep and pacified and stiff.
The silence reigned as one of hunters knelt
And recognized the imprints newly sealed,
For he was most experienced of us,
He said, those were the freshly printed claws
Of two large wolves and their stripling cubs;
Immediately we prepared our knives.
We hid our rifles and their shiny flicker,
And tried to steal across the heavy thicket;
We did not stir a step from one another,
And cautiously we moved amid the heather;
And then we stopped, and I could almost see
Two flaming eyes intent in front of me,
And then, a moment later, four light forms
Were dancing and rejoiced as if the hounds*

Selected by

Victor Postnikov

Victor is a poet, essayist and translator based in Kiev, Ukraine.

Alfred Victor, Comte de Vigny (1797–1863) was a French poet and early leader of French Romanticism. His own philosophy of life was pessimistic and stoical, but celebrated human fraternity and mutual assistance.

*Met their master; but the wolves played mute
Because they sensed an enemy most brute –
A Man – so father-wolf stood still and mother lay,
Like marble statues of the demigods were they,
Like Romulus and Remus of past days.
Then father-wolf came closer to his friend,
And sat and sank his claws deep into sand.
He sensed the siege, all paths were fully blocked,
Just for a moment he seemed lost inside a pack
Of dogs, then rushed to most ferocious dog,
And seized its throat with iron of his jaws,
Immune to dozens knives that stabbed his guts,
And lots of bullets blazing at his parts;
He stood unmoved with lifeless hound long dead,
Then let the breathless body flatly drop
Under his legs, and having looked around,
He drew himself away onto the ground
With jabbed knives and bullets overlap;
He gave a hazy look at us again,
And lay into his blood lake without groan,
And after licking warm blood by his tongue,
He would not deign to give a sign he'd die,
Just closed his eyes and died without a sigh.*

II

*I leaned against my rifle in deep thought
Unable to pursue his partner and his cubs,
I stood and meditated on their lot,
They probably were waiting for his call;
I thought about the beautiful she-wolf,
She could have fought alongside father-wolf,
But had to run with sons that must be saved
And taught defiance, firmness, and revolt,
And how the owners of the stone and wood
Should steer away from human brood,
With their towns and their servile dogs
That hunt for bedding and for food.*

III

*Alas! I thought, despite all earthly fame,
Our cowardice redounds to our great shame.
That is your wisdom, animals sublime!
Only the animals know how to die,
And live on earth and what to leave behind,
And that the silence is the most divine;
The rest is weakness and disgraceful life.
Wild Wanderer! Now I can understand
What your last glance implied before the end;
It said, "Live thoughtfully and study earth,
So that your soul attain the stoic strength,*

*Like us, born into native woods, would reach;
Yet crying, whining, is what men beseech;
Take eagerly the path your heart aspires,
And silently meet pain when life expires.”*

Source: Translation by Victor Postnikov.

Untitled

Ryota Oshima

*Year after year, all the same:
A monkey entertains the crowd
In a monkey's disguise.*

Source: Translation by Victor Postnikov.

Untitled

Issa

*The world is so sad!
Even when sakurs are blooming...
Even then...*

Note: Sakurs = cherry blossom.

Source: Translation by Victor Postnikov.

From the poem The Gardener

Rabindranath Tagore

78

*It was in May. The sultry noon seemed endlessly long. The dry earth gaped with thirst in the heat.
When I heard from the riverside a voice calling, “Come, my darling!”
I shut my book and opened the window to look out.
I saw a big buffalo with mud-stained hide, standing near the river with placid, patient eyes; and a youth,
knee deep in water, calling it to its bath.
I smiled amused and felt a touch of sweetness in my heart.*

Source: Public domain.

Ryota Oshima (1718–87) was a Japanese haiku poet.

Kobayashi Issa (1763–1828) was a Japanese haiku poet. He is better known as simply Issa, a pen name meaning cup-of-tea. He is regarded as one of the four haiku masters in Japan, along with Bashō, Buson and Shiki – the ‘Great Four’.

Rabindranath Tagore (1861–1941) was a Bengali poet, writer, composer, philosopher and painter. He enriched Bengali literature and music, as well as Indian art, with new beautiful metaphors and texture.

Galway Mills Kinnell (1927–2014) was an American poet. He won the Pulitzer Prize for Poetry (1982).

CONTEMPORARY POETRY

St Francis and the sow

Galway Kinnell

*The bud
stands for all things,
even those things that don't flower,
for everything flowers, from within, of self-blessing;
though sometimes it is necessary
to reteach a thing its loveliness,
to put a hand on its brow
of the flower
and retell it in words and in touch
it is lovely
until it flowers again from within, of self-blessing;
as St. Francis
put his hand on the creased forehead
of the sow, and told her in words and in touch
blessings of earth on the sow, and the sow
began remembering all down her thick length,
from the earthen snout all the way
through the fodder and slops to the spiritual curl of
the tail,
from the hard spininess spiked out from the spine
down through the great broken heart
to the blue milken dreaminess spurting and shuddering
from the fourteen teats into the fourteen mouths sucking
and blowing beneath them:
the long, perfect loveliness of sow.*

Jorge Carrera Andrade (1902–78) was an Ecuadorian poet, historian and author. He has been recognized as one of the most important Latin American poets of the 20th century.

Far-left chatter

Jorge Carrera Andrade

*Comrade-cicada
Is splitting her throat with a coda.*

*Instigating green nature
Against man's dictatorship.*

*And despite the branch broken
Her voice is unshaken.*

*Cicada, a far-left commando,
A Minister for Propaganda.*

*On a cabbage, your chirp as expressive:
"Life is hard, and the sun is aggressive"*

*Amiga, your work is incessant.
Undermining the state
With a clatter,
I join you in your crescendo.*

Source: Translation by Victor Postnikov.

afterwards they pull away

Jess Woolford

Jess Woolford is an essayist, memoirist, critic and poet. Jess reads and writes in Manitoba, Vermont and beyond.

*scrapped slump I
stove-in and oh!
so silent*

*trucks snorting
shitting stink*

*only then dare
lift lids
cant head gingerly
scan for (what) remains*

*in gloaming all
is amorphous
all but blaze
between legs*

*weary so
weary thighs drop
open: water
machined to muck
breaks where
are my children?*

*shout their names yet
no sound
surfaces nothing
but crushed crozier scent*

*from eyes rivulets
pool in neck notch
wet wattle and daub woman
I am slack now
struck dumb*

*sooner (or later?)
pelt pushes past root
past crown
parts split lips
p
l
u*

m
m
e
t
s

to torn terrain
lies prone panting
 eastern cottontail
no mere leveret but full-
 grown bloody
flanks quivering

'midst forest brought to naught
 dear ones defiled
side by side we sprawl
 shambled stiffening
 but even so
 gasping to know: why?

*

somewhere someway dozes developer
 so-called
doubtless dreaming dollars
 scheming ticky-tacky
 tracts to conceal
 stolen land
 stolen again
 again ceaseless
settler shell game

Proverbs of Earth

Greg Mikkelson

Greg Mikkelson is a professor with a joint appointment in environmental studies and philosophy at a university in Montréal, Québec.

Improvement makes straight roads, but the crooked roads without improvement are roads of genius.
– William Blake

*With insects, birds, and hay, we share that cosmic Earth-bound unit, day.
Why live for the moment, when there's nothing going on?
And what if some screws were threaded the other way?
We lay down on our backs, and stared up at the trees, swaying not in unison but harmony.
Underneath a sinuous Virginia ridge, a farmhouse, lathered by the quiet moonlight, stands.
The toads come out at night to sit, each pointed toward a different distant star.
The pesticides are homicides.
The number of things left undone increases with age. May we all go out in a glorious flurry
of unpaid debts, uncollected credits, and unavenged slights.
No eye-for-an-eye, but soul for soul.
Never was there a traitor greater than he who failed to pay enough attention to his dreams.
Life is long. The world is wide.
To learn grace, study water lapping over boulders.*

Is a bayou, with her lazy curves corrected in concrete, a bayou really?
 Fog-rays cut by live-oak branches: Tractor beams to heaven.
 Early morning Ozark Mountain sunlight reddens rabbit's ears, held erect above the grass
 she munches.
 The doomed beauty of fallen maple leaves.
 Death should be Dionysian: Better to be gobbled down by vultures than to lie in coffins, so
 long separate.
 Car ownership in 2020: The moral equivalent of slave ownership in 1820.
 As we set this Rock on fire, who and what shall burn, for what return?
 There are still dragons in the sea. Life eats low-hanging entropy.
 All that was lost we never recovered. From all that was gained we have not been set free.
 When bubbles form on puddles, and then pop, ripples try infinity.

Precipitation

Briana Gonzalez

nine at night and the
 notorious patter of sky-tears
 on the roof leaves sacredness
 tingling the tops of her arms

 front door swings open and slams closed

 she's engulfed in the deep sob of the clouds,
 she's hopping in the puddles, she's
 drenched in heaven's leftovers, she's savoring
 every slick, beady kiss from the upper
 troposphere, and it doesn't matter that the
 street lamps are dim
 or that she forgot her shoes,
 the pooling of wet warmth in between her toes
 and the damp stroke of the downpour in her hair
 is protection enough

 she spreads her arms and is blessed by the rain

 lightning strikes behind her house and a
 grumble of sky-sound sends her into a fit
 of giggles, she can't help but pinch her skin
 to double check that
 the rain
 and hot pavement
 the soaking grass
 the open embrace of night
 are real.

Briana Gonzalez is a
 Hispanic, bisexual woman.
 She is a student in the
 English programme at
 Texas State University,
 pursuing a career in creative
 writing and teaching.
 Outside of crafting poetry,
 she enjoys reading,
 watching the night sky,
 and spending time with her
 loved ones.

Mark Goodwin is a poet–
sound–artist who speaks
and writes in various ways.
Mark was brought up on a
farm in south Leicestershire
and now lives on a
narrowboat just north
of Leicester.

Miniature

Mark Goodwin

*a miniature
badger*

*in your palm
tiny sharp
badger–whiff*

*tiny badger
eye–glints*

*tiny sounds
of badger*

snuffling

*tiny claw
–prickle as*

badger

*scratches as
badger*

treats

you

*as well
as earth*

Sue Bayliss is a holistic
therapist and trainer
and also a priestess of
Rhiannon. She's offered
poetry writing workshops
at Schumacher College and
on retreats.

Crossing the Divide

Sue Bayliss

*Dark shape in the water,
Sliding through the waves,
With such ease.*

*Soul messenger, spirit guide,
Now you raise your head to see me,
And
I hold your gaze.*

*Teach me to be
Immersed in this eternal moment,
As you are in your element,*

*Teach me to follow
The wisdom of the deep,
Inscribed in your cells,
And in mine.*

*Teach me to love
With a heart
Unencumbered by sadness.*

*Selkie spirit,
How blessed I am
To feel your presence,
Your gift of loving
Curiosity.*

*And what am I to you?
Human figure stranded on the shore,
Peering across the watery divide,
Sensing the wild in me
Arising,
To greet
The wild in you.*

*Wading in the swirling waters,
I call to you across the crashing waves,
But you are gone.*

About this poem: Written on 13 June 2020 after visiting Waxham Beach and communing with a female grey seal.

The Bell that Hangs Above the Forest Tolls One Hundred Times a Day

Daniel Hudon

*I asked my students to name a favorite
experience of biodiversity,
for this was the name of our course,
and hoped to hear some enthusiasm
for how they interacted
with the living world.*

*The greater bamboo lemur lives for now
in the rapidly dwindling rainforest
of Madagascar. Like the panda, it eats
only bamboo and as infants they
occasionally suck their thumbs.*

*Not one of them said they used to love
to look for frogs in the summer or
to hike through the autumnal colors.*

Daniel Hudon is an adjunct lecturer and writer. His recent book, *Brief Eulogies for Lost Animals: An extinction reader*, was named a Must Read in the 2019 Massachusetts Book Awards.

*The black macaque feeds all day on fruits
and greets other members of their species
with an embrace. It lives in Indonesia
and in forty years its numbers have fallen
eighty percent from habitat loss and hunting.*

*No one described peeking into a bird's
nest in the spring, or built a birdhouse
or helped plant flowers in the garden.*

*Deforestation has cut the numbers
of the Madagascar fish eagle
down to forty pairs.
The Vancouver Island Marmot
numbers less than forty.*

*No one was incredulous at the flame
of the red maples or remembered lying
in the grass to look at clouds –
the smell of grass.*

*The black rhino has been reduced
by ninety percent over sixty years.
One hundred Iberian lynxes
are left in the wild. The Yangtse
dolphin hasn't been seen since 2004.*

*If they ever enjoyed the parachutes
of dandelions or seeing rain-glistened
spiders' webs, even snorkeling
at the beach they couldn't say.*

*The beginning of wisdom, the Chinese
say, is calling things by their rightful names.
The beginning of the hecatomb
is a plunder of anonymous species.*

*They were freshmen; perhaps it wasn't cool
for them to wonder at the world, at life.
Perhaps they just never did.*

*A sign on the gate of the meadow,
on the gate of the forest, on the gate
of the bestiary: Closed due to extinction.*

Never miss an issue of *The Ecological Citizen*

Sign up for content alerts at: www.ecologicalcitizen.net/#signup

Last Word

“We do not place ourselves above other animals and reject their condition and companionship by right reason but out of stubbornness and insane arrogance.”

Michel de Montaigne

From *Essays* (translated by Screech; first published in 1580)

Tell us what you think

Send us your thoughts on the content of the current and future issues at:

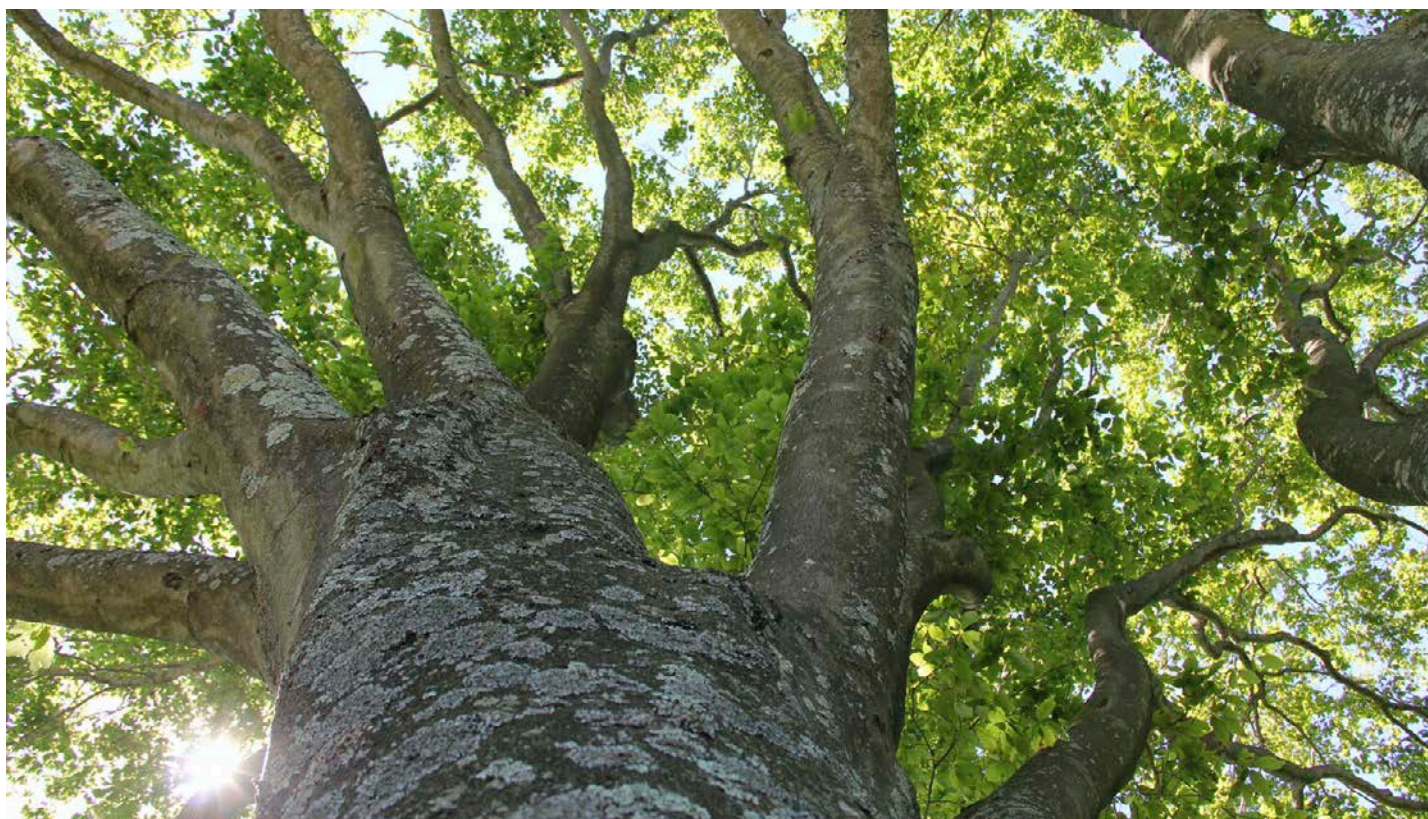
www.ecologicalcitizen.net/contact.html

Stemmed
puffball
Canada
Ian Whyte



Sneezeweed
Canada
Ian Whyte





Oak Spring Garden Foundation's Fellowship in Plant Conservation Biology

About: In 2022 the Oak Spring Garden Foundation will award their annual Fellowship in Plant Conservation Biology to one outstanding, early-career practitioner, scholar or scientist working on issues related to plant and landscape conservation in the broad sense. This is OSGF's most prestigious award for practicing plant conservation biologists. The award includes a \$10,000 individual grant and requires a two-to-eight-week stay at Oak Spring. This fellowship will be granted to an exceptional individual who is engaged nationally or internationally in research or conservation action to help conserve plants, and the landscapes and ecological systems of which they are part.

The individual selected for this award will spend 2 - 8 weeks at Oak Spring where they will be able to meet with staff, explore our 700-acre landscape and sustainable land management efforts, and visit their rare book library that holds over 19,000 objects, including many examples of botanical art. The Fellow will have ample time and space to work independently on their own projects during their stay. The only requirement during their time at Oak Spring will be to give one 45-minute presentation with time for questions, to Oak Spring staff and any other fellows or residents who might be on site.

Application Process: To begin your application, please go to: <https://osgf.submittable.com/submit> and locate the '2022 Residency and Fellowship Programs' application. Please note that there is one application for all of OSGF's 2022 residency and fellowship programs, and you will be prompted to select which programs you would like to be considered for.

Eligibility: Eligible applicants must be early-career practitioners, scholars or scientists, not enrolled in an undergraduate degree program in 2022. The successful Fellow must be self-directed and able to work independently while on site. Applicants are expected to show dedication in their work in plant conservation in the broad sense, exceptional promise, good communication skills and excellence in what they have accomplished or plan to accomplish.

To learn more about this opportunity, please visit: <https://www.osgf.org/fellowships/plant-conservation-biology>

