

SERNews

Volume 36 Issue 2
Traditional Ecological Knowledge



A Key Role

*Active involvement of
local Indigenous communities
is key to restoration success*

Walking on Two Legs

*TEK and western science
working together to up-
hold Indigenous land care*

A Path to Rights

*Indigenous-led
restoration is a path back to
community self-determination*

A LETTER FROM THE EXECUTIVE DIRECTOR



Bethanie Walder
Executive Director
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Dear SER Members,

As a tourist in India in 2006, I visited several tiger reserves — areas set aside in the 1970s to conserve tiger populations. At one of the reserves, we went on an overnight camping trip with former poachers turned wildlife guides. I left the trip feeling that the reserves were good for wildlife and good for the local community by offering training and employment opportunities. At the time, I didn't think about whether my visit or the tiger reserves themselves could be exacerbating the displacement and disempowerment of local indigenous communities, and with it, the destruction of centuries of accumulated traditional ecological knowledge (TEK). Perhaps even more significantly, I really never thought about it in my own country. Indigenous dispossession as a result of conservation is a global issue, and it is easy to find historical and contemporary examples. In the US, public lands — national parks, national forests, etc. — have a similarly troubling history, with Indigenous peoples being forcibly displaced from their ancestral lands so that white tourists could benefit from and commune with the wild nature and grandeur of this newly “protected” place — ostensibly protected from white hunters, poachers, and loggers. As explained in a very good article in [Smithsonian Magazine](#):

Anthropologist Matthew Sanger, a curator at the Smithsonian National Museum of the American Indian, stresses that conflicts with Native Americans were ongoing in the West at that time; Custer's defeat at the Little Big Horn was in 1876. [Yellowstone was founded in 1872.] “Creating a massive park in tribal lands was a distinct political act and it happened under a president who was fervently against Native peoples,” he says. “The park also represents the idea in Western philosophy that people are separate from nature, whereas Native American philosophy sees them as deeply intertwined.”

Conservation and restoration may be good for the environment and for some local communities, but colonial models continue to exacerbate long-standing displacement, land theft, and restrictions around traditional land uses and lifestyles. This also affects communities' ability to maintain and enhance traditional ecological knowledge. When restoration is guided by the idea of a nature-human divide, or when it privileges certain ways of knowing and interacting with the environment over others, it also excludes and suppresses local and Indigenous communities.

This issue of *SERNews* explores the role of Indigenous knowledge in restoration with examples from India, Finland, and Canada. The underlying thread among all three articles is about how restoration is not just a process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed, but also the recovery of communities — including indigenous communities — that have been degraded, damaged, or destroyed. Additionally, each of the articles discuss how restoration is often required as a result of colonial and industrial

impacts over both short and long terms, and that restoration can be highly successful when it is guided by Indigenous communities. From the Sámi people of Fennoscandia, to the Secwépemc Nation in Canada, to the Jenu Kuruba outside (formerly inside) of Bandipur Tiger Reserve, these articles show us how local Indigenous people are not just finding new ways to “walk on two legs” or “see with two eyes” in regards to Traditional Ecological Knowledge (TEK) and western science, but how they are helping non-Indigenous people do so as well.

The thematic articles in this issue also echo SER’s own collaborations. For example, since 2019, we have partnered with the US Bureau of Land Management, the Fort Belknap Indian Community (Montana, USA), and Oregon State University on a community grasslands restoration project. Led by SER board member Cristina Eisenberg, this project is introducing young members of the FBIC to grassland restoration practice from both the western science and TEK perspective. It is simultaneously supporting efforts of the FBIC’s Tribal Historic Preservation Office to engage with elders and other tribal knowledge holders to record and incorporate TEK of grassland ecology into tribal grassland management. SER has been honored to host the first phase of the project since its inception, and we are excited to see how it evolves as it transfers to Oregon State University later this year. In the Society News section, SER Board chair Kingsley Dixon also introduces the newly launched Australian Research Council (ARC) Training Centre for Healing Country, an ambitious, Indigenous-led restoration program that will co-design science, business models, and training opportunities. SER is a global partner to Healing Country and will be sharing more information about the program in the future.

The three articles in this issue are inspiring and beautiful explorations of how participatory, meaningful, and equitable collaboration with local Indigenous communities can rebuild both ecological and community health. They tackle everything from Indigenous burn and fire management, to the unique role women are playing in restorative processes, to successful rewilding efforts. They are also a great precursor to our SER2023 World Conference on Ecological Restoration, to be held in Darwin, Australia in September 2023 — the call for proposals will be coming out soon, stay tuned! SER2023 will focus on the importance, role, and value of indigenous peoples and knowledge in ecological restoration.

This issue of *SERNews* helped me to confront some of my personal colonial biases and actions, and lack of awareness about the history of public lands in my own country. Throughout all of SER’s work, we will continue to promote walking on two legs, seeing with two eyes, and recognizing, celebrating, and incorporating all types of knowledge into global restoration efforts.

TRADITIONAL ECOLOGICAL KNOWLEDGE

FEATURED ARTICLES ON TRADITIONAL ECOLOGICAL KNOWLEDGE IN RESTORATION

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Editors: Alexis Gibson & John Salisbury

COVER

Ron Ignace burning the hillside by their home in Skeetchestn reserve, March 2022. Photo credit: Marianne Ignace.

MEMBERS in ACTION

Been up to anything interesting lately? If you'd like to be highlighted as a Member in Action, email membership@ser.org and we'll keep your fellow members in the loop!



ECOLOGICAL RESTORATION NEEDS INDIGENOUS COMMUNITIES AND THEIR KNOWLEDGE

Ramesh Venkataraman (CERP)
Junglescapes

THE JENU KURUBA

“This is *Magli Beru*” points out Bellamma, an Indigenous elder who is part of a women’s ecological restoration group in Bandipur, a large tiger reserve in South India. *Magli Beru* is the local name for *Decalepis hamiltonii*, a globally threatened shrub species. Bellamma does not know that the species is threatened, but she knows where it grows, how it can be propagated, and its medicinal uses. Over the last eight years she and the women’s restoration group she is part of have carried out a number of restoration activities, including collecting seeds of native plants, raising saplings in nurseries, making gully plugs to arrest soil erosion, and building structures to harvest rainwater.

For the last ten years, Kalaiah has been leading his team of Indigenous men into the forest every

morning to restore areas invaded by *Lantana camara*, an invasive alien plant that has taken over large areas of the forest. As part of a community restoration collective, they remove the weed using a simple manual method and carry out post-removal restoration efforts for regeneration of native vegetation.

Bellamma and Kalaiah are *Jenu Kuruba*, one of several Indigenous communities that have lived in the forest for centuries. The name *Jenu Kuruba* means “honey-gatherer,” as honey was a key traditional food source for the community. When the Bandipur tiger reserve was formed in the early 1970s, all of the Indigenous communities within the area were relocated to the edge of the forest and given housing and small pieces of land. As these communities were not traditionally agricultural, the farmlands were largely unused and many lie fallow to this day. Conservationists

considered human use of the forest to be a threat to the ecology of the tiger preserve, reflecting the conventional view that humans and wildlife were incompatible, and access to the forest for traditional use was restricted.

Without access to traditional sources of food or livelihoods, many Indigenous community members sought work on nearby agricultural farms; however, the farms only needed workers for three to four months per year, which meant the Indigenous workers barely earned subsistence levels of income. A serious consequence of this shift to working on farms was the rapid disappearance of Traditional



Indigenous women’s restoration team. Credit: Junglescapes.

Ecological Knowledge (TEK) as a result of lost access to the forests. Because of these shifts, conservation programs are now viewed by many in the Indigenous community as a threat to their traditional way of life.

THE COMMUNITY-PARTICIPATIVE MODEL

Junglescapes, a grassroots ecological restoration non-profit, has been pursuing a community-participative model of restoration since its inception in 2007. What started with participation of one village and ten community members has now grown to seven villages and around 60 participating members, almost all of them from Indigenous communities like the *Jenu Kuruba*. Since 2007, Junglescapes and participating communities have restored over 1,500 hectares of degraded forests to healthy wildlife habitats, with good recovery of native flora and fauna.

The evolution of a restoration model based on active involvement of local communities was organic. At the outset, Junglescapes created a three-way test to guide our restoration initiatives. First, does the initiative help conserve ecology? Second, does it benefit local communities? And third, is it sustainable? The answer to all three questions had to be “yes” for any new project or idea to move forward. This helps ensure that we design all projects and processes to integrate ecological and social goals in a holistic manner, which has the added benefit of minimizing areas of conflict among stakeholders.

The recognition that TEK could play a key role in restoration efforts in conjunction with scientific knowledge made a key difference to our project outcomes. Scientific knowledge has contributed in areas that the Indigenous communities are not familiar with, like management of invasive species, methods for planning and monitoring restoration projects, and the processing and storage of seeds. This is complimented by the comprehensive knowledge of local communities in regards to the local ecology, including diverse native flora and fauna, micro-habitat requirements of different species, ecological services provided by plant species, and the foraging and seed dispersal habits of a variety of fauna. Indigenous community members also bring their intimate knowledge of the local environment, including the topography, soil types, watersheds and



Community members involved in restoration work —cutting roots of invasive species (top); building a check dam across a stream (center); and building water harvesting structures, the location of which is guided by TEK. Credit: Junglescapes.

streams, climate and rainfall patterns, and habitat linkages. This kind of place-based local knowledge is rarely available from formal documents and would normally take restoration managers years to collect.

Sustained participation of community members necessitates the creation of an annual restoration calendar covering the entire year, as opposed to the traditional approach of only planting during the wet season. Junglescapes restoration approach focuses on assisting natural regeneration; this involves addressing impairment of soil and hydrological functions, high run-off, soil erosion, and other sources of degradation. An annual restoration calendar consisting of a variety of activities that can be undertaken during the dry, intermediate, and wet seasons is aligned to this approach and also ensures participation and income opportunities for community members throughout the year.

Another way Junglescapes builds strong community participation and maximizes livelihood benefits to local communities is by focusing on human-oriented restoration methods as opposed to machine-oriented methods. We design all restoration activities to be achievable through manual methods and using locally available materials. Some examples include the use of locally available stones and

earth to build gully plugs, trenches, and rock detention structures, and logs and branches from invasive species to build beaver-like dams (beaver dam analogs) across streams. Participants collect and process seeds manually. The use of human-oriented methods leverages the TEK of the local community members who are implementing the treatments, and ensures that restoration treatments are continuously adjusted to variations in micro-habitat conditions. Further, manually-implemented treatments help avoid collateral damage to the environment from the use of machinery.

The participation of local Indigenous communities and incorporation of their TEK in restoration projects has been critical to Junglescapes' success, and has had a cascade of both social and cultural benefits. Apart from providing community members with sustained livelihoods, our projects enable meaningful participation in a process that has helped them reconnect with their traditional relationships to nature and assume a stewardship role for the ecosystems near where they live. In response, community members have started to perceive conservation as an activity that both benefits them and relies on their participation, rather than being a threat to their way of life. The involvement of local communities in successful restoration and



The Junglescapes team with the SER Full Circle Award in 2017. The Full Circle Award recognizes restoration projects that incorporate the traditional knowledge of Indigenous peoples in significant ways and reflect a balance between Indigenous and non-Indigenous knowledge and practices. Credit: Junglescapes.

conservation has also gradually started to change how conservationists perceive these communities, with recognition that Indigenous communities are important partners in conservation.

TEK IN RESTORATION

TEK is vanishing quickly in Indigenous communities around the world. The dominance of scientific knowledge as the preferred way of understanding the world over the last century has been a major reason for this decline, further driven by a disconnect between Indigenous communities and the environment resulting from colonialization, industrialization, and socially insensitive conservation. Even a gap of one or two generations is long enough for local TEK to become extinct. Ecological restoration can play a key role in conserving TEK by giving local communities a chance to both rebuild and share their knowledge with new generations while simultaneously reviving traditional cultural-ecological connections.

For the communities Junglescaples works with, TEK is best passed from one generation to the next through oral traditions and experiential learning, as this type of knowledge is difficult to formalize or document, and many community members are illiterate. Active participation of younger community members alongside community elders has been a key area of focus in our project development to ensure critical ecological information is maintained.

There is an increasing global focus on the facilitation of community participation in ecological restoration. Most of this is rooted in important principles of inclusion and equity. However, this approach has a potential risk of Indigenous or traditional community members being perceived mainly as beneficiaries of restoration instead of as participants. What Junglescaples has found is that the contribution of Indigenous community members is invaluable in achieving restoration outcomes. It might even be appropriate to say that ecological restoration needs Indigenous communities and their knowledge more than the other way around. Shifting to this view could potentially pave the way for greater integration of Indigenous peoples in deciding when, where, and how restoration projects happen as we progress through the UN Decade on Ecosystem Restoration.



An elephant walks through a restored patch of forest. Credit: Junglescaples.



"WALKING ON TWO LEGS": AN INDIGENOUS FRAMEWORK TO GUIDE RESEARCH AND RESTORATION

Sarah Dickson-Hoyle and Marianne Ignace
University of British Columbia and Simon Fraser University

This article is adapted from the article "Walking on two legs: a pathway of Indigenous restoration and reconciliation in fire-adapted landscapes," recently published in *Restoration Ecology* and co-authored by Ronald Ignace, Shannon Hagerman, Lori Daniels, and Kelsey Copes-Gerbitz.

"We have an important word, x7ensq̓t. And that word means that if you don't respect the land, look after the land properly, the land will turn on you. And we see that today, that people are not honouring the land, and respecting the land. So we're seeing great fires burning... the land is turning on us."

Kukwpi7 Stsmél'qen (Ronald E. Ignace, Secwépemc Nation)

Worldwide, Indigenous peoples are leading the revitalization of their/our cultures through the restoration of ecosystems in which they are embedded. At the same time, throughout western North America, a major driver for ecological restoration is also the rapid increase in size and severity of "mega-fires," such as those that burned throughout British Columbia (BC) Canada in 2017. Among the largest was the "Elephant Hill" mega-fire, which burned approximately 192,000 hectares throughout the heartland of the Secwépemc Nation, Secwepemcúlecw — a vast area of high cultural and ecological diversity extending over 180,000 km² throughout the southern and central parts of what is now known as BC. In the wake of these fires, and with accelerating impacts of climate change compounding impacts of colonization on Indigenous peoples, Secwépemc communities took action to advocate for Indigenous-led processes of land-based recovery and restoration.

In 2019, the eight Secwépemc communities impacted by the Elephant Hill fire founded the Secwepemcúlecw Restoration and Stewardship

Society (SRSS). Guided by natural resource and cultural heritage staff from Secwépemc communities, the SRSS acts as a platform for collaborative stewardship and restoration throughout Secwepemcúlecw, connecting First Nations with partners in government, industry, not-for-profits (most notably, the World Wildlife Fund Canada), and academia. Throughout these projects — from restoring riparian vegetation to protecting salmon habitats and populations, to developing a Secwépemc cultural heritage resources monitoring protocol, to trialing new techniques for deciduous species restoration and forest carbon assessments — the SRSS is "walking on two legs": the one leg of Indigenous knowledge and science, and the other of western science.

In this article, we introduce this concept of "walking on two legs" to guide restoration scientists and practitioners in supporting Indigenous-led restoration throughout Indigenous territories. We then illustrate its potential for bringing together diverse ways of knowing through two case studies from Secwepemcúlecw: The first involves Secwépemc-led restoration of cultural keystone species, and the second involves the centering of Indigenous perspectives in collaborative research. The first case study — "Bringing back t̓sewéwye and q̓weq̓wile" — highlights the importance of Indigenous peoples actively leading the restoration of their/our territories. Beyond restoring native plants, this place-based longitudinal experiment shows how revitalization of stewardship practices is intimately connected to the revitalization of Indigenous Knowledge (IK) and language, which can only occur through Indigenous peoples reclaiming stewardship of the land. The second case study — "Two-legged fire histories" — illustrates the process of learning to walk on two legs from a western science perspective, deepening our understanding of the histories of fire and place to inform restoration.

"WALKING ON TWO LEGS" TO LEAD RESTORATION OF FIRE-ADAPTED LANDSCAPES

In pursuing collaborative restoration in Secwepemcúlecw, we are guided by what kúkwpi7 (Chief) Ronald E. Ignace terms “walking on two legs” (WO2L). As an action- and practice-oriented framework, WO2L can guide restoration scientists and practitioners in working respectfully with Indigenous communities and knowledges, ensuring projects are guided by Indigenous peoples. This draws on Secwépemc conceptualizations of Indigenous knowledge as “action and the ability to act, based on relationships, on experience, living and doing on the land” (M. Ignace et al., 2016). The metaphor of walking also implies balance between co-existing knowledges, and forward movement that addresses power relations which privilege western science. WO2L is explicit in being guided by an Indigenous — in our case, a Secwépemc — worldview: a moral compass that ensures both knowledges work together in service of upholding an Indigenous land care ethic that is embedded in specific Indigenous territories, languages, and ways of relating to land.

In describing walking on two legs below, the “we” voice employed is that of Ron and Marianne Ignace — both residents of the Secwépemc community of Skeetchestn. Addressing both Indigenous and non-Indigenous readers, we do this to center Secwépemc voices and an Indigenous perspective as we outline the principles that guide us moving forward.

As a strategy of reclaiming IK and stewardship practices, walking on two legs addresses how Indigenous practitioners and thinkers, connected to our specific ancestral territories, resume taking care of our homelands by reclaiming and reinvigorating our IK as we engage with western scientific knowledge. As we do this, we must protect the moral and ethical integrity of our own IK and be mindful that it never stands in the shadow of western knowledge(s), nor should we uncritically embrace and copy the knowledge and practices of non-Indigenous colonizers on our land.

The Secwépemc stsptekwll (oral tradition) of Coyote and His Hosts reminds us to not copy the ways of others lest we lose our life, health, and identity: our trickster-

transformer Coyote tried to copy the behaviour of other creatures as he sought to elevate his social standing, getting scorched, burnt, and nearly drowning in the process. We are admonished to carefully and cautiously view other sources of knowledge through the lens of our own IK, ensuring that they will not cause us harm. Our Elders also remind us that, after more than a century of colonial western science-based, capitalist profit-oriented exploitation of our Secwépemc homeland, it is in a state of qwempúlecw: the land, in its holistic dimensions of landscape, ecology and all its living beings, has become barren due to human activity, impoverishing our wellbeing and existence.

As we walk on two legs, we face the dual task of reconstructing and practicing our IK, while undoing the harm done by ongoing colonial practice and exploitation. As we do this, ethical and reciprocal western science that advances Indigenous stewardship and restoration can be our ally.

Case study 1: Bringing back t'sewéwye and qweq'wile: restoring cultural keystone species at Skeetchestn (Ron and Marianne Ignace)

Like other cultural landscapes in western North America, Secwepemcúlecw was shaped for generations by Indigenous fire stewardship to manage plant habitats by clearing dead plants, enhancing soil nutrients, and controlling invasive species (Peacock et al., 2016). Ron Ignace remembers riding on the land with his great-grandfather Edward Eneas in the 1950s, when a western focus on timber value had led to criminalization of Indigenous burning. Defying these prohibitions, Edward Eneas stubbornly continued burning in mountain meadows and at forest edges to renew grassland habitat for ungulate forage, to enhance berry patches, and to keep meadows open.

Elders in our community of Skeetchestn, who were interviewed over the past ten years regarding their memories of burning and land stewardship practices, remembered that the optimal time for burning in the valley bottom is after the snow has melted, but while the soil is still moist. This time is currently mid- to late-March; however, over the past three decades, we have observed the snowpacks in the valley decreasing. It is likely that in the past, this timing would have been early

Figure 1: View along the Deadman River in Skeetchestn reserve. Credit: Sarah Dickson-Hoyle.



Figure 2: Ron Ignace burning the hillside by their home in Skeetchestn reserve, March 2022. Credit: Marianne Ignace.



Figure 3: Tt'sewéwye (yellowbells) emerging from the snow in early spring. Credit: Marianne Ignace.



April. Burning at higher elevations takes place later in April. Another window for burning is late September to early October. During these short two-to-three-week windows of time, we work with localized wind conditions in our valley (Figure 1): wind directions are usually from the south in the morning, but as temperatures rise during the day and provide updrafts, the wind direction shifts to blowing north to south, thus providing a natural fire break. Fires set before noon will move north, to be driven back by the shifting northerly wind in the afternoon, eventually dying by dusk. The migration of sandhill cranes high above the valley also coincides with the burning period as the cranes take advantage of the same up-drafts and wind conditions.

After fencing our ranch to keep cattle and horses out, in about 2005, we began an experiment of annually or biennially burning meadows and a hillside on our ranch at Skeetchestn Reserve (Figure 2). After a few seasons we noticed how burning controlled knapweed and other invasive species. Around 2010, we saw the return of *tsewéwye*, *Fritillaria pudica* (yellowbells, Figure 3) and *qweqwile*, *Lomatium macrocarpum* (large-fruited desert parsley). Both had been missing from the hillside for decades, due to years of cattle and horse grazing and lack of burning. Both plants are cultural keystone species for the Secwépemc: yellowbells are harbingers of spring arriving, and their bulbs were valued by our ancestors as the first delicious fresh root plant to emerge after months of subsistence on stored provisions. The taproot of large-fruited desert parsley is known for its medicinal properties and was also a significant early season root plant. In his song, the meadowlark warned Coyote not to waste his large-fruited desert parsley, singing in ‘meadowlarkese’ but with Secwépemc words “*tucíctsemc ten qweqwile*” (“you wasted my large-fruited desert parsley on me”). This reminds us to harvest it early in the season, since it turns bitter as the plant matures.

Annual spring counts of yellowbells showed plants steadily increasing from 50 plants in 2011 to more than 300 in the record year 2017. In 2018, following a season of not burning, yellowbells decreased to just over 200. The fragility of the plants was seen when cattle broke into the area in early spring 2019

and all but destroyed the crop, although by 2020 about 75 plants had returned. In April this year, just weeks after burning the hillside, we counted over 200 yellowbells in this one small patch (Figure 4, Figure 5).

Our community field lab demonstrates how over a 10+ year cycle, cultural keystone plant species can be successfully restored into local grasslands through the reintroduction of fire. More significantly, it shows how we continue to revitalize and adapt



Figure 4 (top) and 5 (bottom): *Tsewéwye* (yellowbells) and *qweqwile* (large-fruited desert parsley), and fresh growth on the recently-burned hillside at Skeetchestn. Photo credits: Sarah Dickson-Hoyle.



Figure 6: Forest walks with T'ixelc Elders in at Ne SEXTSÍNE.
Photo credit: Kelsey Copes-Gerbitz.

the knowledge and wisdom of our Elders and ancestors, and reclaim traditional stewardship roles as yecwminmen, through the practice of restoration.

Case study 2: Two-legged fire histories: where tree rings and Indigenous knowledge meet (UBC Tree-ring Lab)

Tree-ring fire history research (referred to as dendro-pyrochronology) is one of many western science approaches used to inform restoration by providing quantitative evidence of historical fire frequency, severity, and seasonality. For almost two decades, our research team at UBC has been using dendro-pyrochronology to inform restoration and management of mixed-conifer forests adapted to frequent, low- to mixed-severity fire regimes in BC's valleys and mountains.

Our most recent fire history project has been ongoing since 2016 and is a collaboration guided by knowledge and needs of T'ixelc (Williams Lake First Nation, a Secwépemc community). This project, led by Dr. Kelsey Copes-Gerbitz from the University of British Columbia Faculty of Forestry, is taking place at the Ne SEXTSÍNE (Flat Rock) block of the Williams Lake Community Forest, which is co-managed by the T'ixelc and the City of Williams Lake. For T'ixelc Elders, respectfully restoring ecocultural values is central to management of Ne SEXTSÍNE, as is protecting the area from uncharacteristic high-severity fires, like those that burned surrounding forests

in 2017 (Copes-Gerbitz, 2021; Copes-Gerbitz et al., 2021). Together with our community partners, our research team is centering Indigenous knowledge systems by engaging in place-based learning while walking through the forest with T'ixelc Elders, archaeologists, community forest managers, and researchers (Figure 6). During these forest walks, we collectively learned that the diversity of ecocultural practices of camping, fishing, berry-picking, and plant harvesting across Ne SEXTSÍNE mirrored the diversity of fire frequency and severity reconstructed from tree-rings (Figure 7). For

example, the areas that were frequently occupied by T'ixelc people, including summer fishing campsites, winter village sites, and the travel corridors between them, were more likely to have tree-ring evidence of frequent, low-severity fires from that time. Colonial impacts in the 1860s and 1870s displaced the T'ixelc from their traditional territory and the low-severity fires ceased.

As non-Indigenous researchers, learning to walk on two legs is transforming our research approach in two ways. First, we shifted from an earlier approach of simply comparing Indigenous oral histories to



Figure 7: Cross-section of a lodgepole pine (*Pinus contorta* var. *latifolia*) from Ne SEXTSÍNE showing fire scars from fires in 1833, 1848, and 1863. Photo credit: Kelsey Copes-Gerbitz.

tree-ring fire histories, to collaborative research with the T'xelc that centers Indigenous ways of knowing from the outset. Second, we moved away from solely analyzing quantitative metrics of fire frequency and severity, and instead, explicitly sought to identify localized fires and situate them within the context of the ecocultural histories of these landscapes. Our work continues to reveal nuanced interconnections between Indigenous stewardship and fire in dry forest ecosystems where the contribution of Indigenous fire use is underrepresented or discounted in modern management practices. By walking on two legs, T'xelc-led restoration at Ne Sxst'sine is informed by a more holistic focus on restoring the appropriate kinds of fire associated with T'xelc stewardship practices and values that were disrupted by colonization, and the dynamic relationships among people, fire, and place.

THE FUTURE OF COLLABORATIVE RESTORATION AND STEWARDSHIP IN SECWEPENCÚLCW

In 2021, wildfires once again devastated Secwépemc communities and territories. Faced with significant impacts to sensitive watersheds and significant traditional resource harvesting areas, Secwépemc communities are (re) asserting their/our sovereignty and seeking to transform approaches to forest management and restoration. By walking on two legs, we are centering Secwépemc knowledge and upholding traditional responsibilities as *yecwminmen* to restore reciprocal relationships with *tmicw* (the land and all who rely on it) through the process and practice of Indigenous-led restoration.

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**More than 20,000 volunteer
hours to date**



**Connects local hands on
restorative activities to
global change**

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can get involved and
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makeadifferenceweek.org**

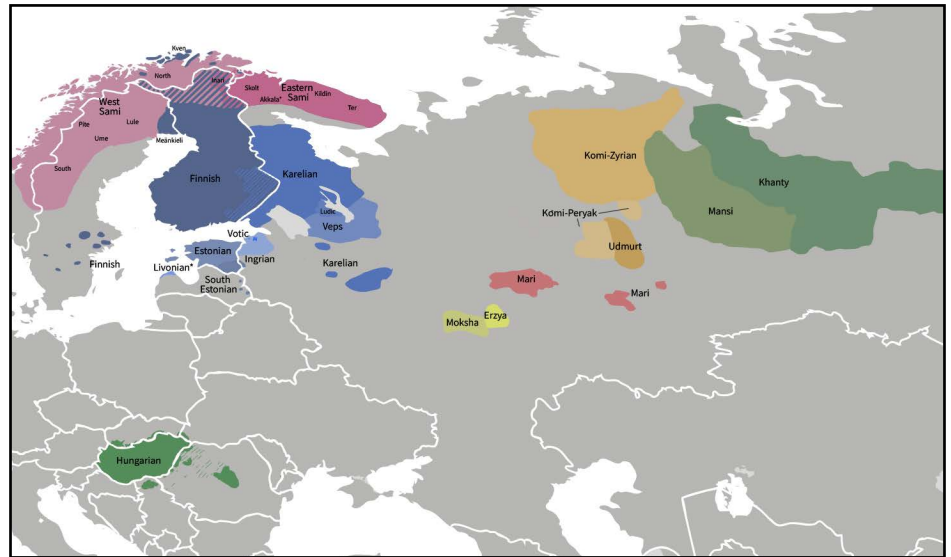


LANDSCAPE REWILDING REALIZES INDIGENOUS AND COMMUNITY RIGHTS IN THE EUROPEAN NORTH

Tero Mustonen
Snowchange

The European North (Norway, Sweden, Finland, and NW Russia) — also called Fennoscandia — contains the largest wilderness areas of Europe and is the traditional home of many peoples, including the Sámi, Europe's only recognized Indigenous group. Many other Finno-Ugric groups such as Karelians, Komi, Nenets, Livonians, and residents of Finnish rural villages have also been co-habiting in this region for centuries, developing their traditional knowledge of habitats and models of sustainable use of resources. The Sámi and Finno-Ugric peoples are the oldest human societies of the region we know of, having established their siida Indigenous territories (a local community that has existed for time immemorial) in pre-historic times. We also know other human populations previously existed in the area, but they left few traces of who they were or how they lived.

These linguistic and cultural links across the region provide for a unique cultural matrix reaching from Western Siberia to Norway. Despite their long establishment in the region, the traditional communities across Fennoscandia are in various stages of modernization and cultural loss due to the significant human alterations of the region as a result of industrialization over the past 100 years.



Map of the homelands of Finno-Ugric Peoples of Eurasia (top; Credit:Wikipedia), and the historic borders of Sámi siidas (local communities). All images credit of Snowchange unless otherwise noted.

Since 2000, the Finnish non-profit Snowchange Cooperative has been piloting far-reaching rewilding and ecosystem restoration actions in North Karelia and Sámi areas that combine Indigenous and traditional knowledge with the latest western science. In 2017, Snowchange initiated the Landscape Rewilding Program (LRP) with the European Investment Bank (EIB) and other actors to develop landscape rewilding actions built on community rights of Indigenous and traditional people as a novel vehicle for addressing the challenges of simultaneous climate and biodiversity crises.

This article explores Snowchange's work in Finland with a specific focus on Indigenous Sámi-led and community-led rewilding projects.

ECOSYSTEM DEGRADATION IN FINLAND AND IMPACTS ON TRADITIONAL COMMUNITIES

Historically, the interlinked Finnish and Sámi communities maintained lifestyles built on fishing, hunting, small-scale slash and burn farming, and reindeer herding, resulting in multi-age and multi-species forests. Ecosystems in Finland have been degraded in a number of ways over the last 100+ years as a result of industrialization and loss of traditional lifestyles. Impacts to major habitats include:

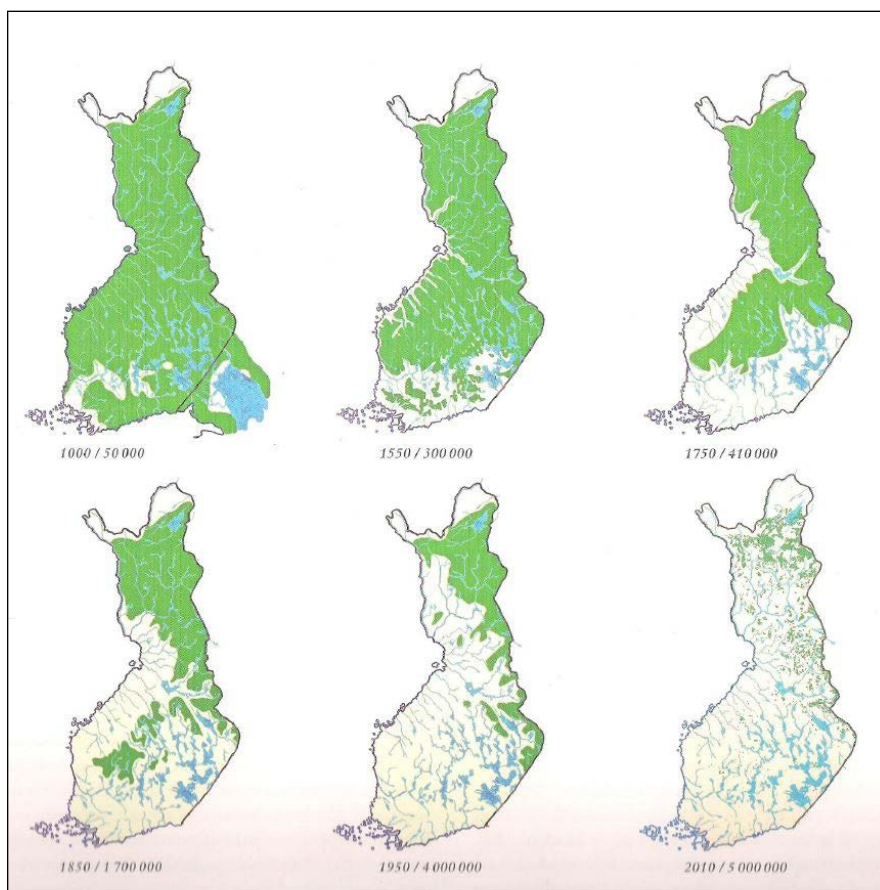
Forests

The first wave of commercial exploitation of Finnish forests started with the international tar trade in the 1600s, when tar — which is produced from wood — became Finland's primary export. Tar was used to help ships survive in tropical seas, a critical need as European colonial powers extended their reach across the oceans. A second wave of commercial forestry emerged in the 1800s after the invention of steam powered sawmill equipment, increasing the productivity of sawmills. The third and most impactful wave was the large-scale clear-felling of timber forests for

the pulp and paper industries, gathering speed especially after 1945. This wave resulted in the loss of 95% of natural boreal forest ecosystems south of the Arctic Circle in just 80 years (see attached map). A large driver of this industrial push was the war reparations Finland was obligated to pay to the Soviet Union after World War II, resulting in the rapid, destabilizing, single-generation modernization of Finnish society. This meant that the reparations — paid in full in 1952 — were provided by a top-down clear-felling forestry industry that sprung across the country rapidly, and was subsequently expanded and maintained. Strong state management of timber assets offered few alternatives to maximized uses of natural forests.

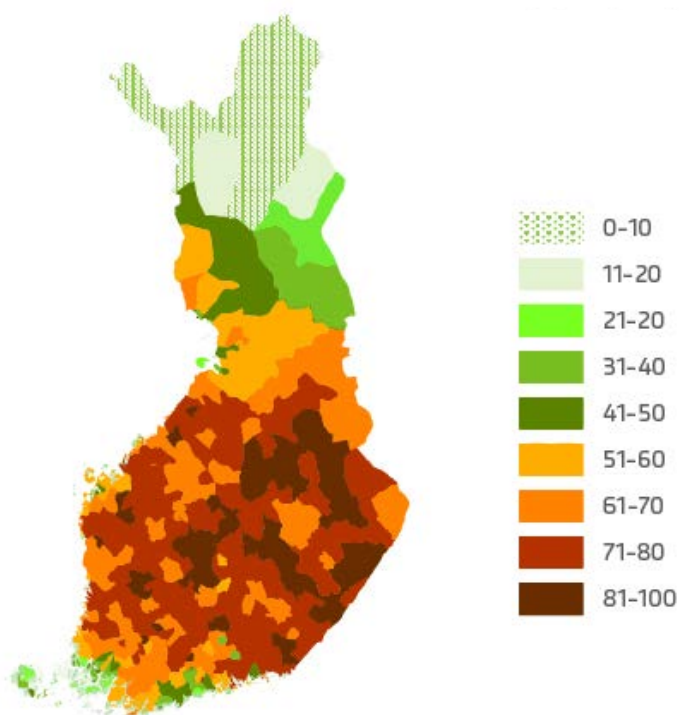
Peatlands

Finland is a central location for boreal and Arctic peatlands, with over 10 million hectares of peatlands within its borders (~30% of the land area). Globally, peatlands store more than 30% of the remaining soil-based carbon in the world today. Coinciding with the proliferation of industrial forestry starting



Lähde: P. Keto-Tokoi & T. Kuuluvainen 2011: Suomalainen aarniometsä

Forest degradation from 1000–2010, used with permission.



Intensity of peatland ditching in Finland, measured as a percent of area. Credit: LUKE — Creative Commons.

in the 1940s, today more than 5 million hectares of Finnish peatlands have been converted through peat mining and forestry ditching and extraction. In addition to site-specific loss of habitat, these changes have also had downstream impacts on water quality.

Rivers

Large river systems such as the Kemijoki, Kokemäenjoki, and Kymijoki define the geography of Finland. These large rivers were historically home to cold water-dependent aquatic species such as Atlantic salmon (now one of the most threatened salmon in the world, including unique freshwater salmon in Saimaa), trout, grayling, burbot, whitefish, freshwater mussels, and many more. Additionally, Sámi and rural Finns relied on rivers as an economic resource — salmon from Kemijoki was a European-wide trade asset in the 1500s and 1600s.

As with peatlands, many rivers in Finland were degraded between 1945 and the 1970s in response to the needs of the forestry and pulp industries. Dams, river alterations, and the development of hydroelectric stations significantly changed the form and function of rivers. In response, catchment areas — especially around peatlands — released large amounts of sediment, nutrients, and mercury downstream, degrading water quality and fish

spawning habitat, increasing eutrophication, and warming river temperatures. As a result, populations of cold-water aquatic species collapsed, and so too did the socio-economic system built around them.

Impact on Traditional Communities

The period from 1945 to the 1990s (and in some ways to the present day) was a time of massive, interconnected, top-down shifts that altered the largest wilderness ecosystems in Europe, all in the span of 50 years. Degradation was intrinsically linked to the transformation of traditional wilderness economies and communities, including the Sámi. This resulted in the loss of rights, loss of linguistic and cultural diversity, and direct assimilation of Indigenous communities into the modern world. Large scale logging, the establishment of massive hydropower stations on rivers, and road construction altered the fabric of life, especially in the southern portions of the Sámi homeland.

The proliferation of snowmobiles also altered the dynamics of reindeer herding, creating an additional dependency on the cash economy, and many semi-nomadic herders were living in houses by the 1960s. However, the Sámi navigated these changes by adjusting and maintaining their reindeer herding, and since the 1990s, there has been an accelerating linguistic and cultural revitalization and reclamation of both cultural histories and practices. Rewilding efforts can be seen as a part of this process.

REWILDING RISES UP TO THE CHALLENGE AND REALIZES COMMUNITY RIGHTS

It is against this background of ecological and cultural degradation that Snowchange founded the Landscape Rewilding Programme (LRP) with the specific goal of empowering and realizing Indigenous rights. This includes enabling local communities to guide our work through collaborative management, having Indigenous women lead the decision-making process when projects are on their territory,

and never making decisions without the consent of the affected Indigenous community or traditional owners.

In the first five years of the LRP, Snowchange rewilded and restored 35,000 hectares over dozens of catchments. To make this work possible, Snowchange has purchased some sites while others are managed through land use agreements — Snowchange and private landowners agree on restoration and management actions that will take place on their property. To date, over 62 sites Snowchange works in can be seen as Indigenous and Community Conserved Areas (ICCAs), with the largest site (Kivisuo peatland) being the same size as some national parks in Finland. Three of these sites have been already registered in the UNEP WPDA Registry as official ICCAs.

Below are three examples of LRP projects from forest, peatland, and river ecosystems, illustrating how Indigenous and traditional communities guide our work:

Metsonrauhavaara

Metsonrauhavaara (“Hill of Peace for Capercaillie”) is a 120-hectare Skolt Sámi boreal forest site that was partly logged in the 1990s but still contains undegraded forest. For context, the last undegraded boreal forests in Finland are located in traditional Sámi homelands. However, the Sámi have no land or water rights and most of the boreal forests are in state or private ownership and at risk of logging. In the mid-2010s, the Skolt Sámi leaders reached out to Snowchange to strategically develop a plan to purchase and restore boreal forests then held in private ownership. Collectively, we identified a non-degraded core (20 hectares) and another partially degraded 100 hectares that became Metsonrauhavaara.

Metsonrauhavaara was the first site of its kind to be included in the LRP. The site is co-managed by the Sámi and Snowchange, recognizing Sámi rights by putting them in charge of deciding and controlling management and restoration actions. Some human actions, building on Indigenous knowledge, are in the management tool kit, including traditional burns to stimulate return of northern boreal species, maintaining lichen populations to create high-quality

reindeer pastures, and sustainable culling of moose to support natural regeneration. While Snowchange is a co-owner of the property, nothing happens without decisions from the Sámi. Rewilding actions are co-designed and implemented by the Sámi and scientists and strive to position Metsonrauhavaara as a model for boreal Indigenous-led restoration.



Credit: Snowchange

Linnunsuo

Located in North Karelia, Linnunsuo (“Marsh of Birds”) was used as a peat mining site between 1982 and 2010. Traditional Finnish fisherman in the area, Heikki Roivas, witnessed several massive fish die-offs in the Jukajoki River downstream of Linnunsuo resulting from mud and acidic peat runoff from peat mining operations. Working with village leaders in the towns of Selkie and Alavi in the Jukajoki watershed, the fishermen were successful in leading the charge to have peat mining suspended.

Once mining was suspended, residents of Selkie and Alavi villages initiated a community-led restoration of Linnunsuo, and in 2017, Snowchange integrated the site into the LRP. The villages have expanded their work throughout the Jukajoki catchment, working with dozens of landowners, companies, cities, and municipalities.

To date, restoration actions include building nine large wetlands that span 180 hectares, capture peat sediment and heavy metals, and prevent more CO₂ from leaving the peat soils. As a result of restoration, the area has become important bird habitat with 195 species recorded, including regionally



rare species such as the Long-billed Dowitcher (*Limnodromus scolopaceus*) and Terek sandpiper (*Xenus cinereus*). Additionally, having been considered a dead river just a decade before, Jukajoki is once again a trout river with a spawning population of the extremely rare Vuoksi brown trout.

Linnunsuo is an example of a traditional Finnish village using local ecological knowledge and science to address large-scale extractive damages and lead a path to recovery. While the original peatland ecosystem may take over a century to recover, the early success of biodiversity recovery and climate action led the program to receive the prestigious St. Andrews Prize for the Environment in 2021. You can learn more about the program in this short documentary: <https://prettygoodproductions.net/films/selkie>.

Vainosjoki

The Vainosjoki River is a part of the Indigenous Sámi Näättämö catchment in the Finnish Arctic. The river was heavily altered and straightened between 1968-1972 to make it easier for transportation of logs to mills. These alterations led to the loss of habitat and spawning areas for trout, grayling, and other salmonid fish.

In 2013, Sámi Elders contacted Snowchange to initiate the restoration of the Vainosjoki. Following a lengthy permit process, the entire five kilometer river was restored — including restoration of juvenile fish habitats, spawning sites, and natural flows. Sámi Indigenous knowledge was critical to the project, especially since there were no written records about the condition of the river prior to degradation. The Sámi shared their knowledge to establish the reference condition of the river and set restoration goals. Additionally, traditional, Indigenous, and scientific knowledge were combined by project partners to develop restoration and monitoring methods.

Vainosjoki, now fully restored, is a powerful symbol — a first where Sámi knowledge was used to undo damages caused by both dredging and commercial logging management actions, as well as to address climate adaptation — and it serves as a source of great pride to marginalized Sámi, especially the women who led the work.



BUILDING A SUCCESSFUL PROGRAM: EQUITY AND RIGHTS IN REWILDING

The work of Snowchange in the LRP would not have been possible over the past five years without recognition of Indigenous and community rights or the leadership of Indigenous women — such as Skolt Sámi Pauliina Feodoroff. Reflecting on what motivates her to engage in restoration, Pauliina said:

I have noticed that many Sámi women of my generation — who have been born in the intersecting moment of an interrupted traditional world and a transfer into the modern world — have found ourselves, in different scales, working either in defending our waters or our land. We are being guided by the pain that we feel in our bodies. Our bodies act as gauges of environmental change: the first indicators and first responders of something happening.

Indigenous knowledge and Western Science offer us concepts and possibilities to reflect on those changes that the waters in our bodies have

known and reminded us of what has happened already much earlier. Changes in temperature, pain and the gradual passing of pain, waves, and intrusions within our bodies are knowledges that are difficult to communicate. . . And, thus, our Indigenous conservation work ends up being no longer a choice but a bodily commitment.

Many of the LRP scientists and Indigenous knowledge holders contributed to the recent IPCC Working Group 2 report, and the message from both traditional communities and science is clear: rewilding, restoration, and Indigenous partnerships are a powerful vehicle of solutions for the most pressing issues in the north. However, these partnerships need to be equitable and fully recognize Indigenous rights in conservation to be relevant and valuable to all parties.

Restoring Vainosjoki by hand. Credit: Snowchange



FEATURED RESOURCES

UPDATES FROM THE RESTORATION RESOURCE CENTER, *RESTORATION ECOLOGY*, AND THE WEBINAR LIBRARY

Restoration Resource Center

21

SER's [Restoration Resource Center](#) (RRC) is an online platform for exchanging knowledge and experience through ecological restoration projects, publications, and other resources from around the world. Practitioners and researchers are encouraged to submit their projects.

Restoration Ecology Editor-in-Chief Picks

22

This quarter we're featuring three articles from the April 2022 issue of *Restoration Ecology* selected by our Editor-in-Chief, Stephen Murphy, focusing on Indigenous restoration, people-centered rules for restoration, upscaling restoration, and incorporating Bayesian modeling into adaptive management.

Webinar Library

23

Enjoyed the theme of this issue? If you'd like to learn more about restoration programs involving Indigenous communities, check out these selected webinars from the SER library.



RESTORATION RESOURCE CENTER

FEATURED RESOURCES

Photo: Brostock via Getty Images.



BRIDGING CULTURES — ETHICAL SPACES FOR INDIGENOUS VOICES

Gary Pritchard

In this SER2021 presentation, Gary Pritchard shares experiences and considerations for meaningful engagement with Indigenous peoples in restoration. Topics include an introduction to ethical spaces, two-eyed seeing, co-governance, and achieving Nation-to-Nation success.



Photo: Forest Peoples Programme.

RESOURCES ON FREE, PRIOR, AND INFORMED CONSENT

Forest Peoples Programme

Free, Prior, and Informed Consent (FPIC) is an international human rights standard that emerged from the rights of Indigenous people to self-determination. This resource database developed by the Forest Peoples Programme provides a list of publications focused on implementing FPIC developed by a variety of groups in different contexts.



RESTORATION ECOLOGY EDITOR-IN-CHIEF PICKS

WALKING ON TWO LEGS: A PATHWAY OF INDIGENOUS RESTORATION AND RECONCILIATION IN FIRE-ADAPTED LANDSCAPES

Sarah Dickson-Hoyle, Ronald E. Ignace, Marianne B. Ignace, Shannon M. Hagerman, Lori D. Daniels, Kelsey Copes-Gerbitz

The UN Decade on Ecosystem Restoration presents a timely opportunity to strengthen the critical and active roles of Indigenous peoples in ecological restoration, particularly in fire-adapted landscapes shaped by Indigenous fire stewardship. The authors share the “walking on two legs” framework developed by Secwépemc Elder Ronald E. Ignace as a model to balance western science with Indigenous stewardship and traditional knowledge. Together, “walking on two legs” and reconciliation offer guiding principles for restoration through elevating Indigenous rights and stewardship systems in their/our homelands.

TEN PEOPLE-CENTERED RULES FOR SOCIALLY SUSTAINABLE ECOSYSTEM RESTORATION

Marlène Elias, Matt Kandel, Stephanie Mansourian, Ruth Meinzen-Dick, Mary Crossland, Deepa Joshi, Juliet Kariuki, Lynn C. Lee, et al.

The potential for restoration to achieve both ecological and social goals can only be met with an increased focus on people-centered restoration strategies. The authors synthesize insights on ways to center human and social dimensions in restoration, and advocate for restoration to recognize rightsholders, diverse stakeholders, and their interrelations; political-economic histories; tenure; communities as agents of change; equity; multiple restoration benefits; distributional issues; diverse evidence and knowledges; contextualized narratives; and holistic monitoring, evaluation, and learning.

UPSCALING ECOLOGICAL RESTORATION: TOWARD A NEW LEGAL PRINCIPLE AND PROTOCOL ON ECOLOGICAL RESTORATION IN INTERNATIONAL LAW

An Cliquet, Anastasia Telesetsky, Afshin Akhtar-Khavari, Kris Decler

International and national restoration commitments are primarily based on quantitative targets, but the UN Decade on Ecosystem Restoration provides a chance to move towards substantive and qualitative legal obligations for restoration. The authors argue for two avenues to achieve this goal: (1) development of an international legal principle for ecological restoration that would join other international law principles and push towards achieving the highest level of recovery possible; and (2) creating a new protocol in the Convention on Biological Diversity that spells out a high ambition level for ecological restoration and a legal basis for adopting generally accepted rules and standards for restoration.

BAYESIAN MODELING CAN FACILITATE ADAPTIVE MANAGEMENT IN RESTORATION

Cara Applestein, T. Trevor Caughlin, Matthew J. Germino

Near term predictions of ecological restoration outcomes are urgently needed despite imperfect knowledge of ecosystems. Restoration outcomes are always uncertain but integrating Bayesian modeling into the process of adaptive management allows researchers and practitioners to explicitly incorporate prior knowledge of ecosystems into future predictions. Although barriers exist, employing qualitative expert knowledge and previous case studies can help narrow the range of uncertainty in forecasts. Software and processes that allow for repeatable methodologies can help bridge the existing gap between theory and application of Bayesian methods in adaptive management.



WEBINAR LIBRARY IN CASE YOU MISSED IT...

SER hosts a webinar series to engage with restoration experts from across academia and the applied field; we also partner with our chapters to bring additional regional webinar perspectives. One of the benefits of SER membership is access to our ever-expanding [Webinar Library](#) as well as our conference presentation library. In this issue of SERNews we are featuring presentations on projects involving Indigenous communities and Traditional Ecological Knowledge.



Bring the Salmon Home: Protecting Tribal Trust Resources on the Klamath

Craig Tucker and Michael Belchik



Tribal Leadership and Sovereignty and the Relevance of Restoration Planning

Dezerae Hayes



Seeds of Success: FBIC-BLM-SER Restoration Program

Cristina Eisenberg



Community Restoration in Utqiagvik, AK

Lorene Lynn



Creating a Restoration-based Rural Economy and Reviving Traditional Ecological Knowledge

Ramesh Venkataraman

SOCIETY NEWS

UPDATES ON MEMBERSHIP, POLICY & PRACTICE,
THEMATIC SECTIONS, AND MORE

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Board Election Update

Business Member Update

Member Update: Wild by Design

Diversity, Equity, and Inclusion Standing Committee Announced

New Member Benefit: Insurance

Putting First Nations First in Restoration: SER Involved in New Healing Country Program

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SER-Eastern Canada (SER-EC)

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INSR News



MEMBERSHIP NEWS

ANNOUNCING THE 2022-2024 SER BOARD OF DIRECTORS

SER is pleased to announce the election of four new members and the re-election of six returning members to its Board of Directors. Four other board seats were not up for election in this cycle. The newly elected/re-elected board members are: Ramesh Venkataraman, Cristina Eisenberg, Excellence Akeredolu, Emanuela Weidlich, Peter Alele, Laura Graham, Jordi Cortina-Segarra, Luiz Moraes, Tom Kaye, and Bruce Clarkson.

“The expertise of both new and returning board members will strengthen SER’s ability to achieve our mission,” announced Kingsley Dixon, SER Board Chair. “This election illustrates the continuing impact of our global restructuring with increased representation from South America and Africa, while also reflecting the membership’s recognition of the need for diverse and inclusive representation for the field. I am thrilled to welcome these talented individuals to the board.”

SER would like to extend a sincere thank you to all the incredible candidates who ran for seats during this highly competitive election. We would also like to thank our current board members who will be stepping down at the end of their terms, Andrew Whitley, Kris Decleer, Travis Sowards, and Vicky Temperton, for their leadership and guidance to SER. Lastly, thanks to all of the SER members who voted this election cycle.

The current board concludes its term on 30 June, 2022. The 2022-2024 board will be seated 1 July, 2022 through 30 June, 2024. Newly elected board members are denoted with an asterisk(*). Re-elected board members are denoted with two asterisks(**). All remaining board positions were not up for election this cycle. Institutions are listed below for informational purposes. Member spotlights of the newly-elected board members will be released in June.

2022-2024 BOARD OF DIRECTORS

Executive Committee:



Kingsley Dixon

Chair
School of Molecular and Life Sciences,
Curtin University
Perth, Western Australia

Kingsley is a restoration ecologist and conservation biologist, professor, and Director of the Center for Mining Restoration with 40 years of experience in restoration focused on landscape scale ecological restoration and conservation practice through empowering Indigenous communities and communities globally. Kingsley was the Foundation Chair of SER’s Australasian chapter and was a founder of SER’s International Network for Seed-Based Restoration (INSR) Section. Kingsley is a passionate believer in the social, economic, and environmental values of global restoration.



Jim Hallett

Vice Chair
University of Montana
Washington, USA

Jim Hallett is a research ecologist and Affiliate Professor in Ecosystem and Conservation Sciences at the University of Montana. Jim has served in several leadership roles at SER, including as Chair (2018-2021). Jim is also Vice Chair of the Global Partnership on Forest and Landscape Restoration (GPFLR), and has been a collaborator on initiatives related to the UN Decade, such as the FAO’s Best Practice Task Force. Jim helped to develop the second edition of the Society for Ecological Restoration’s *International Principles and Standards for the Practice of Ecological Restoration*, and is currently

working to develop strategies for prioritizing restoration interventions in large-scale initiatives.



Ramesh Venkataraman, CERP

Treasurer**

*Junglescapes Charitable Trust
Karnataka, India*

Founder of the restoration non-profit Junglescapes and a Certified Ecological Restoration Practitioner (CERP), Ramesh has been engaged in the restoration of degraded tropical dry forests in and around a major tiger reserve in South India since 2008. His areas of specialization include management of invasive alien plant species and assisted natural regeneration. He has worked to establish a community-participative model of restoration which actively involves Indigenous communities living near forests, in recognition of which Junglescapes received SER's Full Circle Award in 2017. Ramesh has been a member of SER since 2015 and has served on the SER Board since 2018. He is also a member of SER's sub-committee on Traditional Ecological Knowledge (TEK).

Regional Representatives:



Peter Alele

Africa Representative*

*Conservation International
Nairobi, Kenya*

Dr. Peter Alele has nearly 20 years of professional experience in ecological restoration and currently serves as the Vice Chair of the Board of the SER Africa Chapter. Outside of SER, Dr. Alele is the Senior Regional Director (Africa) for Conservation Science at Conservation International (CI) and leads CI's Africa Conservation Science portfolio of programs in 22 countries, giving him a broad perspective on restoration needs and opportunities in the region. Additionally, since July 2018, Dr. Alele has been a Member of the Strategic Advisory Committee for the Global Evergreening Alliance (GEA), currently the world's largest evergreening effort. He holds a PhD in Ecology, MSc in Biology (Natural Resources Ecology & Conservation), and a BSc in Forestry.



Laura Graham

Asia Representative**

*Borneo Orangutan Survival Foundation
Palangka Raya, Indonesia*

Laura is a Project Leader at the Borneo Orangutan Survival Foundation (BOSF) in Indonesia. Laura earned her BSc in Plant Sciences at Cambridge University, UK, where she began her work in tropical and restoration ecology. She went on to shape her PhD around the multidisciplinary issue of degradation in tropical peatland ecosystems. This led to her working as an environmental monitoring scientific advisor for the first REDD+ demonstration project on tropical peatland, and finally to her current position with the Environmental Monitoring Team for BOSF Mawas.



Jordi Cortina-Segarra

Europe Representative*

*University of Alicante
Alicante, Spain*

Jordi is a full professor at University of Alicante (Spain) and Chair of the European Chapter of SER. Jordi received both his Masters and PhD degrees in Biology from University of Barcelona, and also conducted postdoctoral studies at Colorado State University. Jordi has been involved in many aspects of ecological restoration including species selection, seedling production, site preparation, use of interspecific interactions, participatory processes, and systematic planning. He has taught graduate and undergraduate courses in ecological restoration for over 20 years, and coordinated the University of Alicante's MSc program on Restoration and Management of Natural Environments.



Luiz Moraes

Latin America and the Caribbean Representative**

*Embrapa
Rio de Janeiro, Brazil*

Luiz is an agronomist who has worked both as a practitioner and a researcher in ecological restoration over the last 25 years. His current work with Embrapa, the Brazilian Agricultural Research Corporation, focuses on ecological restoration in agricultural

landscapes. Particularly interested in the power of connectivity and networking, Luiz has been involved with the Brazilian Network for Ecological Restoration (REBRE) since it began ten years ago. The exchange of diverse experiences and knowledge of restorationists worldwide is essential for the field of restoration ecology.



Tom Kaye

North America Representative**
*Institute for Applied Ecology
Oregon, USA*

Tom is the Executive Director of the Institute for Applied Ecology (IAE), a leader in habitat restoration and native seed production in Oregon and the Southwestern United States. His current research at IAE includes reintroduction ecology of plants as a tool for their long term conservation in fragmented landscapes, grassland and wetland restoration, pollination, and native seed germination and establishment. He has extensive experience in nonprofit management, and is a Lifetime Member of SER.



Bruce Clarkson

Pacific Representative**
*Pacific University of Waikato
Waikato, New Zealand*

Professor Bruce Clarkson is a restoration ecologist interested in habitat restoration to bring Indigenous nature back into towns and cities. He is based at the University of Waikato in Hamilton, New Zealand and leads the government funded "People, Cities, and Nature: restoring Indigenous nature in urban environments" research program. In 2016, he received the Royal Society of New Zealand Charles Fleming medal for environmental achievement. He is a board member and chair of the SER Australasia Chapter, as well as being on the oversight group for the Aotearoa New Zealand Biodiversity Strategy.

At-Large Representatives:



Cristina Eisenberg

Director-at-Large**
*Oregon State University
Montana, USA*

Cristina is a member of the graduate faculty at Oregon State University in the College of Forestry. As an Indigenous woman scientist, she is the principal investigator on two major on-the-ground projects with First Nations (Alberta, Canada) and Native American (Montana, USA) communities to integrate Traditional Ecological Knowledge (TEK) into restoration practice in western North America. She is a Smithsonian Research Associate and from 2014 until 2019 she was the Chief Scientist at Earthwatch Institute, where she oversaw a global research program focusing on ecological restoration, human communities (particularly Indigenous peoples), and resiliency. Cristina is the author of numerous books, journal articles and book chapters. Cristina is working to reactivate and lead the SER TEK Committee.



Excellence Akeredolu

Director-at-Large*
*University of Lagos
Lagos, Nigeria*

Dr. Akeredolu holds a PhD in Fisheries Management with specialization in Wetland Ecology, Ecotoxicology, and Endangered Species Management (University of Ibadan, Nigeria), MSc in Fisheries Management (University of Ibadan, Nigeria), Bachelor of Technology in Fisheries and Wildlife Management (Federal University of Technology Akure, Nigeria), and a Graduate Certificate in Endangered Species Management (University of Kent). Dr. Akeredolu serves as the Regional Representative for West Africa on the SER Africa Board of Directors. At the University of Lagos, where he works, Dr. Akeredolu pioneered the creation of the first SER student chapter in Africa.



Jeanne Chambers

Director-at-Large
*USFS, Rocky Mountain Research Station
Nevada, USA*

Jeanne is a senior scientist with the US Forest Service Rocky Mountain Research Station and an adjunct Professor at the University of Nevada in Reno, NV, USA. She has led multiple long-term collaborative projects to develop strategic, multi-scale restoration approaches for increasing ecological resilience to disturbance as well as resistance to plant invasions. She has authored or coauthored over 190 journal articles, synthesis papers, technical reports, book chapters, and books. She joined SER in 1992 and served on the Editorial Board of *Restoration Ecology* (1994-1999). She was a charter member of the SER Great Basin Chapter, and received the first SER-GB Distinguished Restorationist Award in 2014.



Stephanie Mansourian

Director-at-Large
*Independent Consultant
Gingins, Switzerland*

Stephanie is an inter-disciplinary scientist who has worked on Forest Landscape Restoration (FLR) for the last 20 years. She began managing the WWF's International FLR program in 2000 but is now an independent consultant working on different projects for several international clients. Her research has centered on governance and FLR, the subject of her PhD in Geography from the University of Geneva, Switzerland. An active member of the International Union of Forest Research Organizations (IUFRO), she is co-deputy of its task force on transforming forest landscapes.

Student and Emerging Professional Representative:



Karma Bouazza

Director-at-Large
*Lebanon Reforestation Initiative, USFS International Programs
Beirut, Lebanon*

Karma has worked with the Lebanon Reforestation Initiative and the US Forest Service International Programs since 2011. As a Native Nursery and Ecological Restoration Specialist, she has developed and supported projects in Lebanon, Jordan, Guinea, Zimbabwe, Morocco, Rwanda, and Madagascar. She has also been involved with the US Forest Service's Sustainable Environment and Economic Development (SEED) program since 2016, currently established as WADI for Sustainable Ecosystems Development NGO. Her focus is on both native seed and plant materials resources and ecological restoration through both community- and science-based approaches. Karma received her BSc in Agriculture Engineering and her MSc in Plant Protection from the American University of Beirut, Lebanon.



Emanuela Weidlich

Student and Emerging Professional Representative*
*Universidade Federal de Santa Catarina
Santa Catarina, Brazil*

Emanuela Weidlich is a Brazilian ecologist, with a master's degree in forestry engineering (Universidade Federal do Paraná, Brazil), and a PhD in Natural Sciences (Leuphana University, Germany). Her professional work involves both scientific research and teaching in Brazil, England, USA, and Germany. After finishing her PhD, she was a postdoc researcher at Universidade Federal de Santa Catarina in Southern Brazil, working with applied ecology and restoration in coastal zones. She is currently a lecturer at Leuphana University in Germany. Her research focuses on integrating ecological theories and practices to sustain restoration and conservation, in both temperate grasslands and tropical forests. She acts as Associate Editor for the *Journal of Applied Ecology* and as co-chair of IUCN restoration thematic groups.

BUSINESS MEMBER UPDATE

In March, SER hosted a special event for Business Members to discuss the new global restoration monitoring framework and SER's forthcoming strategic impact plan to leverage the Society's decades of experience to support the UN Decade on Ecosystem Restoration. Held twice a year, these small-group discussions offer an opportunity for members to interact and network across sectors and geographies, identify intersectional opportunities in the field, and provide an insider's perspective on new and emerging activities happening within SER.

WELCOME NEW BUSINESS MEMBERS

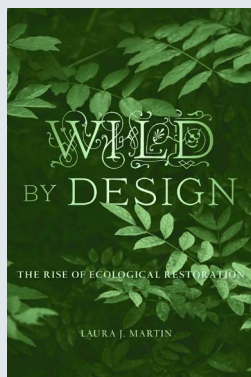
All Business Members are listed in the [Restoration Directory](#) on SER's Restoration Resource Center. The directory provides a resource to identify and locate environmental restoration leaders in private and public industries.



IBS Braiding supports First Nation Ownership and Co-development in Major Projects. We offer consultation services for First Nation Impact Benefit Agreements and Indigenous Economic Development Corporations. Our aim is to optimize economic development and environmental protection for major projects, thereby supporting Indigenous ownership and co-development. Our areas of expertise include economic development & partnership structuring, business planning, project impact assessment support, and more. <http://www.ibabraiding.com>



Lost Habitat is a unique team of experts specializing in wildlife ponds, trees, and ecological landscaping in Devon, UK. Situated in Exeter Science Park, we specialize in restoration, conservation, maintaining and restoring habitats, enhancing ecosystem services, and protecting biodiversity. The team is led by one of Cornwall's Eden Land and Ecological Restoration Master's 2020 graduates, which sponsors one of SER's Student Associations. <https://www.losthabitat.uk>



MEMBER UPDATE: WILD BY DESIGN

In *Wild by Design: The Rise of Ecological Restoration*, SER Member Laura J. Martin tracks restoration's transformation from an obscure hobby to an international undertaking.



Analyzing previously unconsidered archives from the Society for Ecological Restoration, the US Fish and Wildlife Service, The Nature Conservancy, and the US Atomic Energy Commission, *Wild by Design* analyzes the history of ecological restoration as an idea, practice, and scientific discipline in the United States. Martin frames restoration as a mode of collaboration with other species, arguing that it is indeed possible to manage for wildness, and even to design it, in a way that is socially just. Learn more about the book [here](#).

DIVERSITY, EQUITY, AND INCLUSION STANDING COMMITTEE ANNOUNCED

The Society for Ecological Restoration's Diversity, Equity, and Inclusion (DEI) Ad Hoc Committee convened in October 2020 to increase diversity, equity, and inclusion within the Society, and thereby catalyze DEI within the wider ecological restoration field. The committee's scope was to: review the full [Code of Ethics](#) and recommend additional improvements to strengthen the DEI language; develop a [Code of Conduct](#) for SER events (with Incident Reporting Guidelines); identify the barriers that limit full participation by all SER members; prepare recommendations to improve diversity, equity, and inclusion within both the Society and the field of ecological restoration; and deliver these recommendations to the SER Board of Directors along with terms of reference for a Standing DEI Committee of SER. The Society is incredibly grateful for the effort of this committee, and will be sharing a detailed report of its accomplishments later this year.

At the start of 2022, the ad hoc committee officially transitioned to a Standing Committee. The Society is pleased to introduce the members of the Standing Committee:



Beka Nxele is an ecologist with a BSc in Plant Bio- & Molecular Technology, an Honours Degree in Molecular Biology (University of KwaZulu-Natal), and an MSc in Conservation Ecology (University of Stellenbosch). Presently, he is a Programme Manager in eThekweni Municipality of South Africa, responsible for the implementation of community-based, large-scale ecosystem restoration programmes that control Invasive Alien Species (IAS) and scale restoration. He is passionate about the socio-ecological aspects of ecosystem restoration, Indigenous Knowledge Systems, ecosystem services, and methods to resolve human-wildlife conflicts. In addition to serving on SER's DEI Committee, Beka is also a member of the Sustainable Use and Management of Ecosystems committee on the IUCN's Commission on Ecosystem Management, as well as a member of SER's Traditional Ecological Knowledge (TEK) Working Group. Through his work on the DEI Committee, Beka hopes to facilitate and inspire diversity, equity, and inclusion in ecosystem restoration at a variety of scales.



Amarizni Mosyaftiani, CERPIT is a landscape architect, researcher in vegetation ecology, and a Certified Ecological Restoration Practitioner-in-Training (CERPIT).

She has collaborated with multiple stakeholders on projects and research relating to forest restoration, urban ecosystem services, and ecotourism, including the Jakarta urban forests research project with the Jakarta Forest Service and the USFS International Program, as well as forest restoration master planning with the West Java Provincial Government. Through her profession, Amarizni tries to increase awareness of the importance of ecological restoration in her society, particularly in Indonesia. She wishes to contribute to SER's DEI Committee in order to help SER achieve its goals and continue its inclusive support of ecological restoration activities.



Breanna Kaufman, CERPIT is a Science Technician with Eden Project Learning and a Certified Ecological Restoration Practitioner-in-Training (CERPIT). After finishing a BSc in Environmental Science and Anthropology in Oregon, USA, Breanna moved to Cornwall, England to pursue an MSc in Land and Ecological Restoration, where she also co-founded the first SER Student Association in the UK. Breanna's current position involves a multitude of different environmental management, stakeholder engagement, and research responsibilities. Breanna doesn't believe that we can achieve ecological prosperity without understanding and restoring humanity. She joined SER's DEI Committee to influence DEI more directly in restoration, hoping that she can use this opportunity to increase awareness and act on inequalities and barriers in the greater scientific field.



Dianne Watkins is a second-generation immigrant of Welsh and English heritage. She resides in Treaty 3 $\frac{3}{4}$ territory in Ontario, Canada. Dianne initiated "Knowledge of Indigenous Languages" tracking in Canada's National Reports to the United Nations Convention on Biological Diversity. Dianne also teaches Indigenous language classes, which impart a sense of Indigenous thought worlds that continue to enlighten her approach to ecological restoration. Dianne earned a Master of Environmental Studies from the University of Waterloo. As a restoration enthusiast with diverse experience in the public, private, and non-profit sectors, Dianne continues to serve communities at local, regional, and international levels. Dianne states that, "I am honoured to serve SER's DEI Committee during the concurrent UN Decades on Ecosystem Restoration and Indigenous Languages."

The purpose of SER's Standing Diversity, Equity, and Inclusion Committee is to:

- act as the principal discussion and advisory body for promoting diversity, equity, and inclusion within SER;
- ensure that the Society's policies and governance mechanisms fully reflect DEI considerations;
- ensure that the different areas of SER's work and activities reflect and enhance DEI, engaging and elevating underrepresented leaders of all committees, sections, and chapters; and finally;
- help enhance diversity, equity, and inclusion in the restoration field at large.



Frank Kanyamula is a forester from Malawi who holds a BSc in Forestry from the University of Malawi and is currently working towards a MSc in Biodiversity

Informatics at the Malawi University of Science and Technology. Frank is passionate about ecological restoration as a means of significantly reversing the world's tragic loss of biodiversity and researching new innovations that will contribute to informed decision-making. Frank has six years of work experience with different organizations, including World Vision International, Mulanje Mountain Conservation Trust, and Malawi's Department of Forestry, which have served him well in building a solid foundation in restoration. Frank strongly believes that DEI is an important and essential initiative to ensure that everyone is "on board" with restoration and no one is left behind.

being marginalized as an Indigenous person, lack of opportunities, and poverty, he left his community with the hope of finding ways to help it. Hector learned that the best way forward was to invest in education — he soon graduated with a Bachelor's in Science and Engineering from the Instituto Tecnológico de Sonora, a Master's in Science in Natural Resource Management in Arid Regions, from the University Autonomous of Chapingo, and a PhD in Wildlife and Wildlands Conservation at Brigham Young University. Hector joined SER's DEI committee to serve those that have experienced or suffered any kind of exclusion and to be an advocate for inclusiveness in science, in SER's community, and in the practice of ecological restoration.



Hector Genaro Ortiz is an NSF postdoctoral assistant researcher in Dr. Juliana Medeiros's lab at the Holden Arboretum (Ohio, USA).

Hector is Mexican with Indigenous roots in the Sonoran Desert, and identifies as a "nomad scientist." Pushed by the struggles of



Ludmila Pugliese de Siqueira

is a Restoration Manager with Conservation International Brazil, National Coordinator of PACTO, Leader of the Gender and Diversity

WG, a doctoral student in forest sciences at ESALQ-USP, and a mother to two children. Ludmila

joined SER's DEI Committee to better understand how to take advantage of diversity and engage all kinds of people for effective restoration actions, increasing opportunities for success and benefits for all.



Maha Guliani, CERPIT is a Natural Resource Ecologist at the City of Portland's Bureau of Parks and Recreation. She completed her research in plant-pollinator interactions at Florida International University in Miami, Florida. Maha wants to serve on SER's DEI Committee to address the invisibility of underrepresented groups within the field of ecology. After serving on other committees within SER and serving as a Chair of an ad-hoc DEI sub-committee, she believes that SER is an organization that can provide support to underrepresented people in natural resource management and ecological restoration in both academia and environmental organizations.



Ramesh Venkataraman, CERP is the founder of the restoration non-profit Junglescapes and a Certified Ecological Restoration Practitioner (CERP). Ramesh has been engaged in the restoration of degraded forests in and

around a major tiger reserve in South India since 2008. He has worked to establish a community-participative model of restoration which actively involves indigenous communities living near forests. In recognition of this work, Ramesh's non-profit received SER's Full Circle Award in 2017. Ramesh is active in increasing awareness of restoration among diverse stakeholders, as well as in conducting restoration education programs. He has been a member of SER since 2015, and has served on SER's Board since 2018. He is also a member of SER's sub-committee on TEK.

Also present on this committee (but not pictured) is **Rocky Smiley**. Rocky works as a Research Ecologist with the USDA and serves on the Board of Directors for SER's Midwest-Great Lakes chapter.

Make a Planned Gift



For more information about leaving a legacy to support the Society for Ecological Restoration and our ability to uphold the integrity of ecological restoration science and practice, contact Director of Membership and Strategic Development Laura Capponi at laura@ser.org.

NEW MEMBER BENEFIT: LIABILITY INSURANCE FOR RESTORATION PRACTITIONERS

In April, SER announced a new partnership with Conservation United to offer thoughtfully designed insurance products that meet the unique needs of the restoration community — and Certified Ecological Restoration Practitioners (CERPs) in particular.

Available insurance coverages include but are not limited to: General Liability; Workers Compensation; Directors and Officers; Commercial Auto; Property; Umbrella; Volunteer Accident; Surety Bonds; Pollution Liability; and most recently, a Financial Assurance product suite for Compensatory Mitigation Banking projects.

More importantly, Conservation United has negotiated several options that are specific to the restoration field, including, e.g., prescribed fire coverage. These benefits are available through Conservation United and to SER Members. Additionally, CERPs may be eligible for an additional discount on General Liability, Professional Liability, and Pollution Liability policies. You can learn more about the insurance program through this [short webinar](#).

In the spirit of transparency, SER also wants our members to know that as part of this partnership, Conservation United will become a business sponsor of SER, providing a small grant for operating support for SER, making this partnership a win-win situation where SER's community gets access to better and more affordable insurance, and SER receives financial support to serve our worldwide membership and advance the field of ecological restoration.

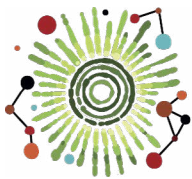
Contact Robert Johnston, Co-founder of Conservation United to learn more about the available insurance products and programs: <https://calendly.com/conservationunited>





PUTTING FIRST NATIONS FIRST IN RESTORATION

Kingsley Dixon
SER Board Chair



ARC Training Centre for

Healing Country

The recently announced Australian Research Council (ARC) Training Centre for Healing Country (“Healing Country”) is creating a robust Indigenous-led science-business interface. This will provide opportunities for Indigenous Australians both to participate in and create restoration businesses to revegetate damaged lands. Participatory restoration of healthy landscapes will help Indigenous communities reconnect with the land. This is a timely and necessary new focus — despite being the oldest continuous culture on earth, Australia’s Indigenous people are one of the most disadvantaged groups in the country. First Nation communities’ link to nature is integral to their customs, beliefs, and spiritual vibrancy, and these values are built on caring-for-country that has developed through more than 65,000 years of continuous connections.

The arrival of Europeans in Australia 200 years ago fractured and degraded these complex and intricate systems of land care. With more than 48% of the continent now degraded, Australia has the highest degradation per capita of any continent. This has resulted in a disconnection of Australia’s Indigenous communities from their land and native ecosystems, many of which formed the spiritual backbone of Indigenous cultural strength. With such a vast loss of ecosystems, Indigenous Australians suffer from poor health, experience one of the highest ethnic incarceration rates in the country, and are the most socially and economically disadvantaged group in Australian society.

Healing Country will develop the principles and practice of connecting people to country by

creating the technology and capacity for Indigenous communities to self-determine what, when, and where ecological restoration can be applied.

Built upon an interface between Traditional Ecological Knowledge (TEK) and western science, Healing Country is uniquely Indigenous-led, with co-design of science, business models, and training opportunities. The Healing Country board reports to a Cultural Advice Council comprised of Indigenous Elders who advise the board on the development and work of the Centre. SER is excited to be a leading global partner to this new, innovative initiative.

SER’s role in Healing Country will enable the global membership of SER to learn about this program, inspiring others to build programs with Traditional Custodians in the three key program areas:

Ecohealth (coordinated with the Ecohealth Network)

- Quantification of individual health and wellbeing benefits resulting from direct participation in restorative activities.
- Identification of community health and wellbeing benefits resulting from the opportunities and outcomes provided by ecological restoration, reconnection with nature, and enduring business.
- Assessment of the economic benefits resulting from ecological health approaches to public health and community wellbeing.

Restoration Technology (central research program)

- Research and development of restoration technologies to deliver biodiverse and cost-efficient restoration, including smart seeding and reinforcement of the native seed supply chain.
- Production of guidelines, protocols, and tools to support sustainable development of native seed businesses and improve seed use in restoration.
- Identification of links between plant species

diversity and soil organic carbon storage, as well as tools needed for cost-efficient assessment of soil carbon to match targets for measuring, modelling, and monitoring soil carbon sequestration.

- Refinement and scaling of techniques for landscape management to improve soil health and seed use efficiency in restoration.
- Development of high-value honey products from biodiverse plantings.

Economic and Business Development

- Quantification of the cumulative economic and commercial benefits derived from an Indigenous Restoration Economy, including measurement of labor, wages growth, employment statistics, productivity, savings in welfare payments, and ongoing investment in local and regional enterprise.
- Calculation of economic multipliers associated with applied skills training, individual employment, and enterprise opportunities to assist in the assessment of direct and indirect impacts on government support payments and linkages between social and civic infrastructure as well as social and economic resilience.

Each of these three programs have both a Cultural Lead (from an Indigenous community) and a Science Lead to guide the cultural relevance of the program as well as ensure blended inputs and outcomes with cultural and scientific stakeholders.

Healing Country has a diverse range of partner organizations, including government agencies, regional environmental NGOS, regenerative farms, plant nurseries, and Indigenous development businesses. These partners will work closely with their respective program leads for on-the-ground outcomes, as well as with the Healing Country board for strategic development.

Commencing on 1 August, 2022, the Centre will be homed at Curtin University in Perth, Western Australia. Noted Indigenous scientist Professor Stephen van Leeuwen will serve as the Director, with Professor Kingsley Dixon (SER Board Chair) as the Science Lead across the research programs. Knowledge from the Centre will enrich and grow SER's capacity to support similar initiatives in Indigenous communities worldwide as an exemplar of the value of restoring land and biodiversity for building strong and healthy First Nations.

**GET
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Become a Certified
Ecological Restoration
Practitioner (CERP)

www.ser.org/CERPProgram

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BY THE SOCIETY FOR
ECOLOGICAL RESTORATION





SCIENCE, POLICY, & PRACTICE UPDATE

SER has had a very busy and productive start to the year, please read on for brief updates about our Science, Practice, and Policy work since February:

SCIENCE AND PRACTICE:



UN Decade. SER, IUCN, and the UN Decade Best Practices Task Force co-hosted an off-cycle “special” Global Forum on Ecosystem Restoration to assist

with the development of the UN Decade Standards of Practice (SOPs). More than 60 people from around the world participated in virtual workshops to provide input into the development of the SOPs. In addition, SER Board Vice Chair Jim Hallett and past-Chair/IUCN CEM ERTG Chair Cara Nelson hosted an in-person consultation at the World Forestry Congress in May. We will be announcing an open global consultation in June or July where all SER members and other interested restorationists will be able to provide input into the developing SOPs.

Learn more about past Global Fora and products:

<https://www.ser.org/page/GlobalFora>

SER Executive Director Bethanie Walder was invited to join the UN Decade Science Task Force core team. Cara Nelson is also a member of the core team, as are several other SER members! The Science Task Force provides an authoritative scientific reference for the UN Decade, and will produce and convey concise information and concepts of terrestrial, freshwater, and marine ecosystem restoration based on rigorous evidence. SER International Policy Lead George Gann joined several other SER members on the UN Decade Monitoring Task Force, which is identifying the best options for monitoring the global progress of the

UN Decade and how to fill current information gaps. SER has already been partnering with the Monitoring Task Force on the development and promotion of the Information Sharing Framework — see below for more details.



Grassland Community Restoration Program.

The third field season of the Fort Belknap Indian Community Restoration Project — in partnership with the US Bureau of Land Management and the Fort Belknap Indian Community (FBIC) — will be starting in the next few weeks. Over the past winter, in addition to hiring for this summer’s field techs — many of whom will be FBIC members who participated in the project’s Community Fellows program — SER also worked with Principle Investigator and SER Board Member Cristina Eisenberg to begin preparations to transfer the program to Oregon State University (OSU) in late 2022. The program has been incredibly successful so far, training local tribal members in restoration and seed ecology, collecting native seed for restoration projects, and supporting the efforts of the Tribal Historic Preservation Office to collect Traditional Ecological Knowledge (TEK) from tribal elders regarding ecological restoration for future use by the tribe. In addition, in April, Cristina was invited by the US Congress to provide testimony in a hearing about TEK in public lands management, including the incredible model this program provides for other potential tribal partnerships. We are very pleased to have launched and hosted this project since 2019 and look forward to handing it off to OSU to continue the efforts for the next 5 years. SER will remain a partner to the program as well.



Seed Information Database.

SER entered into a Memorandum of Understanding (MOU) with Royal Botanic Gardens, Kew, to take over hosting of the Seed Information Database (SID). The leadership of SER's International Network for Seed-based Restoration, and especially Chair Elect Simone Pedrini, is leading the transfer of all content to an updated database tool that will be part of SER's Restoration Resource Center. The SID will be available through SER starting in May 2022 — stay tuned for more information soon!

POLICY:



SBSTTA. Past Board Chair Al Unwin represented SER at the 24th meeting of the Convention on Biological Diversity Subsidiary Body on Scientific, Technical, and

Technological Advice (SBSTTA 24) in Geneva, Switzerland. This was the first in-person meeting of the CBD since pre-COVID, and much work remains to be done to finalize and adopt a new Global Biodiversity Framework at the scheduled Conference of the Parties (COP 15) in the second half of 2022. Ecological restoration is included in a variety of targets now, recognizing the importance of restoration at achieving multiple objectives for the Convention. That said, the parties are not yet in agreement on a wide variety of issues, so another in-person meeting of the “open ended working group” has been scheduled for June to advance the work prior to COP 15. SER will continue to engage and promote the importance of restoration for achieving the overall goals of the Global Biodiversity Strategy, as well as promote a strong and ambitious strategy overall.

SCIENCE, POLICY, AND PRACTICE:



Botanic Gardens Conservation International.

SER entered into a new MOU with Botanical Gardens Conservation International (BGCI) to partner on a wide variety of common activities. In addition, SER is a partner

to a new BGCI-led “Global Biodiversity Standard” program to develop a standard and certification scheme for recognizing biodiversity objectives in global tree planting initiatives and other conservation and restoration programs. We are thrilled to be partnering on this program and providing the ecological restoration context to the work.



SER2023. SER has formally begun planning for SER2023, which will be held in September 2023 in Darwin, Australia. We are pleased to introduce Conference Co-chairs

Bruce Clarkson (SER-Australasia Chapter

Chair, SER Asia-Pacific Regional Representative to the SER Board, and Lead of the Peoples, Cities, and Nature program at the University of Waikato, New Zealand) and Anita Diederichsen (Global Forest and Landscape Restoration Lead for Worldwide Fund for Nature, Brazil). In addition, we are also pleased to introduce the Program Co-chairs, Valerie Hagger (University of Queensland, Australia) and Peter Alele (Senior Regional Director for Conservation Science at Conservation International and Vice Chair of the SER-Africa Chapter, Kenya). SER2023 will be a hybrid event, although we encourage everyone who would like to join us in-person in Darwin to start planning! We will be opening the call for proposals in mid-2022, so please stay tuned for more information.



Restoration Project Information Sharing Framework.

In March, SER and Climate Focus released the Restoration Project Information Sharing Framework. This new tool is

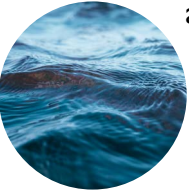
designed to facilitate interoperability and

data normalization among restoration monitoring databases so that practitioners, researchers, and funders alike can all compare “apples to apples” in the restoration context. Since releasing the Framework in March, SER has presented the Information Sharing Framework through the SER webinar series, the IUCN Commission on Ecosystem Management's restoration webinar series, the UN Decade's Monitoring Task Force, the Great Lakes Restoration Interagency Ecological Restoration Quality Control quarterly webinar series, and to SER's business and sponsor members. Climate Focus also presented the Framework at the World Forestry Congress. SER is

in the process of updating our Projects Database within the Restoration Resource Center to be consistent with the Information Sharing Framework, and we are starting to work with several other entities who are interested in updating or creating cooperating databases. Learn more and download both the report and the framework itself at <https://globalrestorationobservatory.com>.

SCIENCE

Seed Technology. The International Network for Seed-based Restoration (INSR) hosted a 4-hour virtual symposium on seed technology in March, featuring speakers and knowledge sharing from around the world. It provided a great opportunity to expand awareness of not just the International Seed Standards, but also existing and new native seed collaborations across the globe. Learn more about the session and watch presentations [here](#).



World Water Quality Week. SER continues to partner with the World Water Quality Alliance (WWQA) Ecosystem Workstream to advance the science and practice of lake restoration. SER co-hosted a symposium and workshop on emerging issues in lake restoration with WWQA in early May 2022, which included the release of preliminary results from a global survey on lake restoration and a series of working group meetings to increase collaboration.

Make a Difference Week
June 4-11, 2022

One week of collective action to benefit the planet

More than 20,000 volunteer hours to date

Connects local hands on restorative activities to global change

SER

Join us in 2022!



CHAPTER UPDATES: SER-IAC

INTRODUCING THE SPIRIT AND HISTORY OF THE SER IBEROAMERICAN AND CARIBBEAN CHAPTER (SER-IAC)

LEER EN ESPAÑOL

Restoring degraded ecosystems is a complex process that involves many diverse actors and disciplines, and which demands transdisciplinary collective work. In Iberoamerica and the Caribbean, the pursuit of strategies that support knowledge exchange, alliances, and interaction between researchers and other social actors has been driven by the creation of networks to promote ecological restoration in the region and, in particular, in countries such as Argentina, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, Mexico, Peru, Venezuela, Spain, and Portugal, among others.

These national restoration networks are effective tools to connect a diversity of involved actors and to promote dialogue and information sharing between groups involved at different levels of ecological restoration. However, even though several networks have been created in Iberoamerica and the Caribbean since 2004, there are still many other countries who have not yet created their own networks.

Since the early 2000s, efforts to engage diverse actors and interested parties in this field of knowledge and action have been championed by the Iberoamerican and Caribbean Society for Ecological Restoration (SIACRE) through some pioneering initiatives:

1. In October 2005, the Latin American Ecological Restoration Network (REDLAN) was founded during a workshop held in Valdivia, Chile. Funded by the Chilean government, REDLAN was focused on networking to strengthen the theoretical and practical bases of ecological restoration. REDLAN's objectives were to promote research on ecological restoration in Latin America and the Caribbean, to facilitate knowledge sharing be-

LEIA EM PORTUGUES

tween researchers and professionals on a regional scale, to develop collaborative projects and activities, to encourage exchange between students and professionals, and to increase capabilities and skills within the region. REDLAN brought together members from ten countries: Mexico, Guatemala, Ecuador, Costa Rica, Paraguay, Brazil, Chile, Argentina, Peru, and Bolivia.

2. In April 2007, within the context of the 2nd International Symposium on Ecological Restoration, held in Cuba, the Iberoamerican and Caribbean Network for Ecological Restoration (RIACRE) was founded. RIACRE's purpose was to bring together technicians, scientists, professionals, conservationists, and institutions interested in ecological restoration and ecosystem management in the region.
3. In 2009, during the First Iberoamerican and Caribbean Conference on Ecological Restoration held in Curitiba, Brazil, RIACRE agreed to partner with SER to host a joint conference in Merida, Mexico. During this Conference, both the Iberoamerican and Caribbean Network for Ecological Restoration (RIACRE) and the Colombian Network for Ecological Restoration (REDCRE) agreed on celebrating together the Third Iberoamerican and Caribbean Congress on Ecological Restoration in Bogotá, Colombia, in 2013.
4. In July 2013, during the Third Iberoamerican and Caribbean Congress of Ecological Restoration, the Iberoamerican and Caribbean Society of Ecological Restoration (SIACRE) was created. SIACRE was born from the merger of REDLAN

and RIACRE. The Society was led by representatives from Argentina, Chile, Costa Rica, Venezuela, Cuba, Bolivia, Peru, Spain, Brazil, Ecuador, Mexico and Colombia, with the main objective of connecting people and institutions active in ecological restoration and ecosystem management in Iberoamerica and the Caribbean.

5. In 2014, SIACRE was formally established in Colombia. During its first year of activity, its main action was to consolidate communication channels by creating a website and quarterly newsletter. During 2015, SIACRE focused on creating and strengthening the Argentinian, Colombian, and Chilean networks. SIACRE also hosted the IV Iberoamerican and Caribbean Conference on Ecological Restoration in Buenos Aires, Argentina. Delegates to the conference started discussions to expand regional collaboration through meetings such as the "Symposium of Groups and Networks." In 2016, efforts focused on strengthening the Ecuadorian and Cuban networks, as well as on supporting scientific publications of the Argentinean, Colombian, Chilean, and Mexican networks.
6. In 2017, SIACRE, SER, and the Brazilian Society for Ecological Restoration (Sociedade Brasileira de Restauração Ecológica, SOBRE) were co-partners on the 7th SER World Conference and the V Iberoamerican and Caribbean Conference on Ecological Restoration, as well as the First Brazilian Conference on Ecological Restoration. As part of this event, SIACRE hosted a workshop for Iberoamerican and Caribbean restoration groups and networks, including delegates from the "Argentinean Network for Ecological Restoration" (Red Argentina de Restauración Ecológica, REA), the "Brazilian Society for the Recovery of Degraded Areas" (Sociedade Brasileira de Recuperação de Áreas Degradadas, SOBRADE), the "Brazilian Network for Ecological Restoration" (REBRE), the "Brazilian Society for Ecological Restoration" (SOBRE), the "Colombian Network for Ecological Restoration" (Red Colombiana de Restauración Ecológica, REDCRE), the "Chilean Network for Ecological Restoration" (Red Chilena de Restauración Ecológica Restauramos Chile — RCH), the Spanish organization "Crean-

do Redes", the "Cuban Group of Flora and Fauna for Ecological Restoration" (GCFFRE), the "Ecuadorian Society for Ecological Restoration" (Sociedad Ecuatoriana de Restauración Ecológica), the "Network for Environmental Restoration" (REPARA -Mexico), and the "Venezuelan Ecological Restoration Network" (Red Venezolana de Restauración Ecológica, RVRE). Along with representatives of the established societies, a substantial number of attendees from Iberoamerican and Caribbean countries participated. Within the framework of the workshop, the great possibilities of collaboration between SER Global and SIACRE became evident, and since then, both societies have been working together to identify strategies to promote our respective networks and develop open channels of communication and exchange.

7. In 2021, building on these past experiences, and as a result of internal reflections within and between societies, it was determined that the most effective strategy to follow would be for SIACRE to maintain its political and administrative independence, while joining SER as its Iberoamerican and Caribbean chapter, under the name of SER-IAC.

The new chapter, whose creation we are communicating through this brief historical review, aims to promote the identity and uniqueness of the Iberoamerican and Caribbean region in terms of the region's natural resources, socioeconomic conditions, and political climate, while creating a path for knowledge exchange and mutual support with other world regions through SER Global. The boards of directors of SIACRE and SER celebrate the creation of SER-IAC as a great opportunity to mutually strengthen and reinforce knowledge development, knowledge sharing, and emerging opportunities to influence the global development of ecological restoration.



SER-IAC BOARD OF DIRECTORS



Pilar Andrés is the Chair of the Board of Directors. She specializes in soil ecology and the preservation and restoration of the ecosystem services it provides. She has 30 years of experience in coordinating projects on land restoration and sustainable management, especially in areas degraded by intensive agriculture and livestock farming. Currently, she is a senior scientist at CREAM (Centre for Ecological Research and Forest Applications, Barcelona, Spain). She was a founding member of SIACRE and has been active on the board ever since.



Eduardo Arellano Ogaz is the Vice Chair. He is a faculty member and Director of the Master's program in Natural Resources at the College of Agriculture and Forest Engineering at the Pontificia Universidad Católica de Chile (PUC) and Principal Investigator of CAPES (Center of Applied Ecology and Sustainability). He is currently working on the development of soil health indicators for fruit and vineyard systems in Chile and Brazil, and on the restoration of non-productive areas in intensive agricultural landscapes in Central Chile.



Liliana Chisacá Hurtado is the Treasurer. She is a Colombian biologist, with a master's degree in planning and administration of regional development. Liliana is the founder of Ecodes, an environmental and restoration organization working in Colombia, Perú and Argentina. She is a founding member of the Colombian Ecological Restoration Network - REDCRE (2007), the Peruvian Ecological Restoration Network - REDPRE (2019), and of the Iberoamerican and Caribbean Society for Ecological Restoration.



Mauricio Aguilar Garavito, the Secretary of the Board of Directors, is a Colombian ecologist currently completing a PhD in conservation and ecosystem restoration. Over the past decade, he has been a researcher, a professor at the Distrital and Javeriana Universities and International Foundation for Ecosystem Restoration, and a coordinator of restoration projects for the Colombian National Natural Parks System and the District Secretary of the Environment and Municipalities. Mauricio is a founding member of the Colombian Network of Ecological Restoration and SIACRE.



Jose Ignacio Barrera Catano is a member of the Board. Since 2002 he has been a Professor of Ecology at the Pontificia Universidad Javeriana (Colombia), where he founded the School of Ecological Restoration and led the creation of the master's degree in Ecological Restoration, which he has directed since 2019. Jose was a founding member of REDCRE, the Latin America Board Representative for SER (2011-2013), and the president of the Colombian Network for Ecological Restoration (2011-2014). He was also a founding member of SIACRE and its president from 2013 to 2017.



Roger Villalobos Soto is a member of the Board. He is a Costa Rican Agricultural Engineer, with a degree in integrated management of natural resources, with an emphasis on Management of Natural Tropical Forests. He is currently a researcher at CATIE's Climate Action Unit and coordinates the master's degree in Management and Conservation of Tropical Forests and Biodiversity. He is part of the technical team for the 20x20 restoration initiative for Latin America, and chairs the Latin American Network of Model Forests and the National Commission for Forest Sustainability of Costa Rica.



CHAPTER UPDATES: SER-EC

HIGHLIGHTS OF THE FIRST JOINT PEATLAND ECOLOGY RESEARCH GROUP & SER-EASTERN CANADA SCIENCE SYMPOSIUM IN ECOLOGICAL RESTORATION (QUÉBEC, CANADA)

Luc Bélanger¹, Claire Boismenu², Line Rochefort³, and Jeremy Lundholm⁴

1. SER-EC Coordinator, 2. PERG Coordinator, 3. PERG Head and SER-EC Co-chair, Québec Region, 4. SER-EC Co-chair, Atlantic Region

LIRE EN FRANÇAIS

In April, SER's new bilingual Eastern Canada chapter (SER-EC) partnered with the Peatland Ecology Research Group (<https://www.gret-perg.ulaval.ca>) to co-host a Science Symposium on Ecological Restoration at Université Laval in Quebec City (Canada). The Symposium focused on restoration and management of disturbed peatlands, but also addressed other types of environments and ecosystems (e.g., urban ecosystems, freshwater wetlands, tidal salt marshes, and tundra). More than 100 people from Quebec and across Canada attended the Symposium either remotely or in person, with presentations offered in both French and English.

Participants represented all aspects of restoration, and included eminent researchers as well as students

and emerging professionals. The Symposium allowed participants to share their passion about new scientific insights, while also addressing some of the current opportunities and challenges in ecological restoration, especially peatland restoration. A few key highlights include:

- University of Waterloo hydrologist Dr. Jonathan S. Price spoke about applying hydrological principles to peatland restoration in Canada — specifically, the importance of establishing the fundamental behavior of water in peat, including how this is relevant to both the degradation and restoration of peatlands.
- Dr. Michelle Garneau, from Université du Québec à Montréal, talked about quantified carbon sequestration in peatlands, illustrating how peat horizons store more carbon than trees in both aboveground and belowground biomass over the same period of time.

SER-Eastern Canada was present with a stand during the Symposium to raise awareness about this new Chapter and recruit members. // SER-Est du Canada était présent lors du Symposium avec un kiosque pour faire connaître ce nouveau chapitre et recruter des membres. (Crédit photo: M. Guéné-Nanchen — Université Laval)



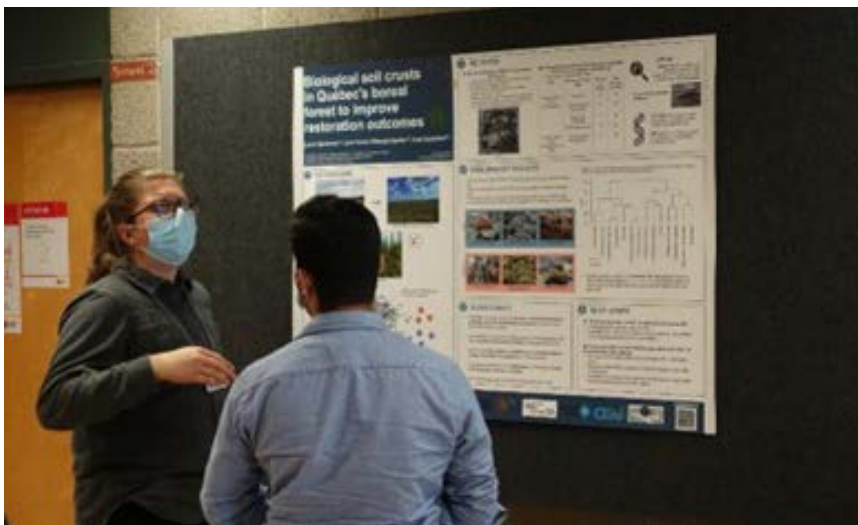
- Dr. Alison Munson, from Université Laval, discussed urban restoration research evaluating alternative and more ecological protocols for vegetation management along streets and boulevards, including impacts on the microclimate (e.g., the heat island problem).
- University of Victoria's Dr. Eric Higgs, former SER Board Chair, delivered an inspiring presentation addressing the issue of "where next for ecological restoration in Canada."

The Symposium also awarded two prizes to student and emerging professional presenters. Mika Little-Devito, master's student at the University of Alberta, won first prize for a presentation entitled "Peat extraction activities: Does the extraction phase influence the export of major chemical water quality indicators?" Second prize went to Charles Gignac, a recent graduate (M.Sc.) from Université Laval for his presentation, "Global warming is more likely than nitrogen deposition to promote a transition from moss-dominated to graminoid-dominated tundra in the High-Arctic."

Over the next few years, SER-EC is dedicated to increasing access to ecological restoration information through a strategic umbrella project entitled, "The SLN Project: A Science Knowledge Sharing, Learning, and Networking tool in Eastern Canada." The SLN Project will create a one-stop discussion forum and knowledge hub to support restoration as a nature-based solution for addressing climate change and biodiversity decline in Eastern Canada. The Science Symposium was well aligned

with this broader mission-related objective. The Symposium was also a unique occasion to grow SER-EC membership. The symposium closed with the First Organizational Meeting of SER-EC, with the objective of meeting SER-related MOU and Canadian non-profit organization legal obligations.

SER-EC is also proud to announce the re-development (post-COVID) of a joint conference in partnership with the Canadian Land Reclamation Association from 11-15 June, 2023, "From Reclaiming to Restoring and Rewilding" (RE3). SER members may remember that this was initially planned for 2020 as the North American SER conference, but was postponed due to the COVID-19 pandemic. Other cooperating organizations include SER-Ontario, the Canadian chapter of the Society of Wetland Scientists, the International Society for Horticultural Science, and the International Peatland Society. To stay informed, you can subscribe to the RE3 Conference Newsletter at <https://www.re3-quebec.org/en>.



Close to 115 people attended in person or remotely to the Symposium, during which more than thirty oral or poster presentations were presented. // Près de 115 personnes ont assisté en personne ou à distance au Symposium au cours duquel plus d'une trentaine de présentations orales ou par affiches ont été présentées. (Crédit photo: M. Guéné-Nanchen — Université Laval)



SECTION UPDATE

THE INTERNATIONAL NETWORK FOR SEED-BASED RESTORATION WELCOMES NEW BOARD MEMBERS

Nancy Shaw
INSR Chair

UPDATES

Native seed in restoration workshop: Native seed programs and new technologies. More than 300 participants attended a virtual INSR workshop in April. The lively and dynamic session featured reviews of international, national, and regional native seed programs, seed sourcing and procurement, and new seed technologies. The recordings are [now available](#) for those who missed the event.

Seed Information Database: Survey results and good news for its future. We received an overwhelming response, [233 submissions](#), to our survey about the Royal Botanical Garden Kew (RBG Kew) Seed Information Database (SID). We are happy to announce that we have finalized an agreement with RBG Kew for SER to host SID! Stay tuned for an announcement on the new location.

RECENT PUBLICATIONS

What is the true price of native seeds?

Seed is commonly sold based on bulk or pure live seed (PLS = purity x viability or germination) weight. Marketing based on the cost of a thousand pure live seeds (\$ TPLS) is suggested as an alternative that incorporates seed quality and seed size. This would enable buyers to more easily calculate the amount of seed required and evaluate the cost-effectiveness of seed-based restoration projects.

Seed dispersal is plummeting just when plants need to move most. With declines in populations of seed-dispersing animals, the ability of plants to move in response to climate change has decreased by more than half.

How to increase the supply of native seed to improve restoration success: The US native seed development process. The Native Plant Material Development Process of the US Bureau of Land Management aims to strengthen the seed supply chain by linking stakeholder groups to increase the supply of high quality, genetically diverse seed of high priority restoration species. The challenges and successes of this framework are discussed.

Are tree seed systems for forest landscape restoration fit for purpose? An analysis of four Asian countries. The Philippines, Indonesia, Malaysia, and India have committed to restore more than 47.4 million hectares by 2030. National assessments of these countries' seed supply systems were conducted using an indicator framework, literature reviews, and expert surveys and interviews. Results identified progress, but provision of an adequate seed supply, effective quality controls, and research into climate change impacts on native vegetation to guide species selection and seed sourcing for restoration remain major challenges.

ABOUT THE INTERNATIONAL NETWORK FOR SEED-BASED RESTORATION

INSR is the largest global network on native seed with more than 830 members from all continents representing research institutions, seed producers, and restoration practitioners.

If you have a question or would like to share information about your native seed program, a recent publication, or a technique or protocol with other seed scientists, producers, or users through our website, please contact us at info@ser-insr.org.



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Know someone interested in ecological restoration? Share this issue of SERNews with them.

For information on how to become an SER member, drop us a note at membership@ser.org or visit our website: www.ser.org/membership.

SER-IAC: UNA SOCIEDAD INTERNACIONAL DE RESTAURACIÓN ECOLÓGICA CON ESPÍRITU Y ENFOQUE IBEROAMERICANO Y CARIBEÑO

LEER EN INGLÉS

La restauración de ecosistemas degradados es un proceso complejo en el que intervienen muchos actores y disciplinas, por lo que debe ser el resultado de un trabajo colectivo inter y transdisciplinar).

El diálogo entre distintos campos del conocimiento para afrontar los retos de la restauración ecológica se genera en espacios como los Grupos de Investigación y las Redes Temáticas. En Iberoamérica y el Caribe, la búsqueda de estrategias que respalden el intercambio de conocimiento, la generación de alianzas y la interacción entre investigadores se ha planteado a través de la constitución de redes de conocimiento, grupos y sociedades de Restauración Ecológica, que han sido fundamentales para desarrollar la restauración ecológica en la región y, a nivel particular, en países como Argentina, Brasil, Chile, Colombia, Costa Rica, Cuba, Ecuador, México, Perú, Venezuela, España y Portugal entre otros.

Las redes nacionales se han consolidado como una forma efectiva de conectar a todos estos actores y de promover el diálogo necesario entre todos los grupos involucrados en los diferentes niveles de la restauración ecológica. Sin embargo, a pesar de que se han creado varias redes en Iberoamérica y el Caribe desde 2004, quedan muchos otros países que necesitan alguna orientación para crear sus propias redes.

En el siglo XXI, el esfuerzo por involucrar a los diferentes actores, o partes interesadas, en este ámbito del conocimiento y de la acción, se plasmó en algunas iniciativas precursoras de la Sociedad Iberoamericana y del Caribe de la Restauración Ecológica (SIACRE):

1. En octubre de 2005, fue fundada la Red Latinoamericana de Restauración Ecológica (REDLAN),

LEER EN PORTUGUÉS

en el marco de un Taller realizado en Valdivia (Chile), con fondos del gobierno chileno para formar redes y fortalecer las bases teóricas y prácticas de la restauración. Los objetivos de REDLAN fueron: promover la investigación en restauración ecológica en Latinoamérica y el Caribe; intercambiar experiencias y conocimiento entre investigadores y profesionales a escala regional; contribuir al desarrollo de proyectos y actividades en colaboración; promover el intercambio de estudiantes y profesionales mediante cursos específicos; e incrementar las capacidades y habilidades de la región. REDLAN reunió miembros de 10 países: México, Guatemala, Ecuador, Costa Rica, Paraguay, Brasil, Chile, Argentina, Perú y Bolivia.

2. El 20 de abril de 2007, fue fundada la Red Iberoamericana y del Caribe de Restauración Ecológica (RIACRE), en el marco del II Simposio Internacional sobre Restauración Ecológica en Cuba, con el propósito de integrar a técnicos, científicos, profesionales, conservacionistas, personas e instituciones interesadas en el tema de la restauración ecológica y manejo de ecosistemas en Iberoamérica y el Caribe.
3. En 2009, se lleva a cabo el I Congreso Iberoamericano y del Caribe de Restauración Ecológica en Curitiba (Brasil), en el que se acuerda realizar el II Congreso junto con SER en el 2011 en Mérida (México). En este congreso, tanto la Red Iberoamericana y del Caribe de Restauración Ecológica (RIACRE) como la Red Colombiana de Restauración Ecológica (REDCRE) asumen el reto de realizar el III Congreso Iberoamericano y del Caribe de Restauración

Ecológica para el año 2013 en Bogotá, Colombia.

4. El 29 de julio de 2013, en el marco del III Congreso Iberoamericano y del Caribe de Restauración Ecológica, se crea la Sociedad Iberoamericana y del Caribe de Restauración Ecológica (SIACRE). SIACRE surge de la fusión de REDLAN y RIACRE, la Sociedad fue conformada por representantes de Argentina, Chile, Costa Rica, Venezuela, Cuba, Bolivia, Perú, España, Brasil, Ecuador, México y Colombia y su fundación tuvo como objetivo principal propiciar la integración de personas e instituciones interesadas en el tema de la restauración ecológica y el manejo de ecosistemas en Iberoamérica y el Caribe.
5. En 2014, SIACRE se constituyó formalmente en Colombia. Durante su primer año de actividad, su principal acción fue consolidar los canales de comunicación con sus miembros activos y potenciales. Para ello, estableció su página web y creó un Boletín trimestral. Durante 2015, SIACRE se concentró en la creación y fortalecimiento de las redes argentina, colombiana y chilena. De igual forma, desarrolló el IV Congreso Iberoamericano y del Caribe de Restauración Ecológica en Buenos Aires (Argentina). En el marco del proceso de construcción e intercambio de experiencias entre las redes y grupos de restauración ecológica de nuestros países, se realizaron algunos encuentros, como el “Simposio de Grupos y Redes”, en el Congreso SIACRE 2015. En 2016, el trabajo se centró en fortalecer las redes ecuatoriana y cubana, así como en apoyar publicaciones científicas sobre las redes argentina, colombiana, chilena y mexicana y en dar soporte a los congresos nacionales de la red colombiana y ecuatoriana.
6. En 2017, SIACRE organizó junto con SER y a la Rede Brasileira de Restauração Ecológica (REBRE), la VII Conferencia en Restauración Ecológica y el V Congreso Iberoamericano y del Caribe de Restauración Ecológica. En el marco de este congreso, SIACRE organizó un taller de grupos y redes en el cual participaron representantes las diferentes asociaciones de Iberoamérica y el Caribe: la “Red Argentina de Restauración Ecológica” (REA), la “Sociedade Brasileira de

Recuperação de Áreas Degradadas” (SOBRADE), la REBRE y la Sociedade Brasileira de Restauração Ecológica (SOBRE), la “Red Colombiana de Restauración Ecológica” (REDCRE), la “Red Chilena de Restauración Ecológica” (Restauramos Chile – RCH), la organización “Creando Redes” (España), el “Grupo Cubano de Flora y Fauna para la Restauración Ecológica” (GCF-FRE), la “Sociedad Ecuatoriana de Restauración Ecológica”, la “Red para la Restauración Ambiental” (REPARA-México), y la “Red Venezolana de Restauración Ecológica” (RVRE). Junto con representantes de las sociedades constituidas, se contó con la participación de actores procedentes de países latinoamericanos y caribeños con escaso desarrollo en restauración ecológica. En el marco del taller, se evidenciaron las grandes posibilidades de trabajo y de gestión conjunta, que ofrecería la colaboración entre SER internacional y SIACRE. Desde entonces, SIACRE y SER han venido trabajando para identificar una estrategia que permita una mayor participación e integración de los miembros de cada sociedad y entre ambas sociedades, para reforzar la cohesión entre las redes locales y abrir canales de comunicación e intercambio más prácticos y efectivos a escala internacional.

7. En año 2021, en base a estas experiencias preparatorias, y a consecuencia de reflexiones internas dentro de cada sociedad y entre sociedades se determinó que la estrategia más efectiva a seguir sería que SIACRE mantuviera su independencia política, administrativa y financiera, a la vez que se incorporase a SER como su capítulo Iberoamericano y del Caribe, con el nombre de SERIAC.

El nuevo capítulo cuyo nacimiento comunicamos por esta breve reseña, pretende salvaguardar la identidad y particularidades de la región iberoamericana y caribeña en cuanto a condiciones naturales, socioeconómicas y de idiosincrasia, a la vez que abre una vía de intercambio y mutuo apoyo con otras regiones del mundo a través de SER internacional. Las junta directivas de SIACRE y de SER celebran el nacimiento de SERIAC como una gran oportunidad para el fortalecimiento mutuo y para el refuerzo de sus capacidades de conocimiento e influencia en el desarrollo de la restauración ecológica a escala global.



Pilar Andrés es la presidenta de la Junta Directiva de SER-IAC. Es bióloga por la Universidad de Navarra (Pamplona, España) y doctora en biología por la Universidad

Autónoma de Barcelona (Barcelona, España), en el área de Ecología. Se ha especializado en ecología del suelo y en los servicios ecosistémicos que proporciona. Actualmente, es investigadora del CREA (Centre de Recerca Ecològica i Aplicacions Forestals, Barcelona, España). Tiene 30 años de experiencia en la coordinación de proyectos de restauración y manejo sostenible del territorio, especialmente en áreas degradadas por la agricultura y ganadería intensivas. Ha dirigido programas de larga duración Europa-América Latina (programa ALFA de la Comisión Europea) dirigidos a la formación práctica de expertos en manejo del territorio para la minimización de su vulnerabilidad frente a riesgos ambientales, y ha coordinado el replanteamiento socioeconómico y ambiental de regiones del trópico seco centroamericano afectadas por degradación de tierras por ganadería. Fue socia fundadora de SIACRE en 2013 y, desde entonces, viene ejerciendo diferentes funciones en su junta directiva.



Eduardo Arellano Ogaz es el actual vicepresidente de la Junta Directiva de SER-IAC, es académico de la Facultad de Agronomía e Ingeniería Forestal de la Pontificia Universidad Católica de Chile (PUC)

e Investigador Principal de CAPES (Center of applied Ecology and Sustainability, Santiago, Chile). Es Ingeniero Forestal, M. Sc. de la Oregon State University y Ph.D. en Forest Biology de la Virginia Tech, USA. Sus áreas de interés son la conservación y recuperación de las funciones del suelo (secuestro de carbono, reciclaje de nutrientes, biodiversidad, retención de agua) en sistemas agrícolas, afectados por incendios forestales y rehabilitados por minería. Actualmente trabaja en el desarrollo de indicadores de salud de suelo para sistemas frutícolas y viñas en la zona central de Chile y en la Caatinga, Brasil y en la restauración de áreas no productivas en paisaje de agricultura intensiva en Chile Central. Coordina un grupo de investigación en Intensificación Ecológica para el desarrollo de sistemas agrícolas sustentables

en Chile (CAPES). Es director de Magister en Recursos Naturales en PUC y docente en el área de ciencias del suelo, restauración ecológica y manejo de agroecosistemas.



Liliana Chisacá Hurtado, tesorera de la Junta Directiva de SER-IAC, es bióloga colombiana, máster en planificación y administración del desarrollo regional.

Tiene experiencia en investigación en biodiversidad, restauración ecológica, servicios ecosistémicos y gobernanza ambiental en ecosistemas tropicales. Ha participado en la construcción e implementación de políticas públicas, elaboración de documentos técnicos en temáticas asociadas al manejo y gestión de la biodiversidad, restauración ecológica participativa, negocios verdes e inclusivos. Su trayectoria principal se ha enfocado en la ejecución de proyectos socio ambientales, fortalecimiento de capacidades en comunidades locales para la definición e implementación de acciones de conservación, restauración ecológica, cadenas de valor y agro biodiversidad, principalmente con comunidades campesinas, afros y pueblos originarios. Es fundadora de Ecodes (2006), organización de carácter ambiental con presencia en Colombia, Perú y Argentina, en la ejecución de proyectos socio ambientales, rehabilitación de suelos contaminados, restauración ecológica participativa, compensación por pérdida de biodiversidad, conservación, manejo integral del recurso hídrico, agrobiodiversidad, servicios ecosistémicos, y acciones de adaptación y mitigación al cambio climático, entre otros. Miembro fundador de la Red Colombiana de Restauración Ecológica - REDCRE (2007) y miembro de su junta directiva (2013 – 2018). Miembro fundador de la Red Peruana de Restauración - REDPRE (2019). Miembro fundador de la Sociedad Iberoamericana y del Caribe de Restauración Ecológica - SIACRE (2013) y miembro de su junta directiva (2013 – 2022).



Mauricio Aguilar Garavito, secretario de la Junta Directiva de SER-IAC, es ecólogo colombiano, máster en restauración de ecosistemas y doctorando en conservación y restauración de

ecosistemas. Experto en el diagnóstico, diseño y monitoreo de procesos científicos y técnicos encaminados hacia el restablecimiento de ecosistemas terrestres tropicales a escala del paisaje, poblaciones y comunidades afectados por uso agropecuario, deforestación, especies invasoras e incendios. Capacitado para la identificación de espacios con prioridad de restauración, así como para el establecimiento de viveros y reproducción de plantas nativas. Idóneo en asesorías y acompañamiento de proyectos socio ambientales con comunidades rurales y con población vulnerable. Su interés se centra en el fortalecimiento de capacidades y en desarrollar investigación sobre la limitación al reclutamiento de especies nativas, dispersión de semillas por murciélagos en paisajes rurales y el papel de las relaciones planta-planta y planta-animal en la regeneración natural de robledales, páramos y bosques andinos. Durante los últimos siete años ha trabajado como investigador del Instituto de Investigación de Recursos Biológicos Alexander von Humboldt coordinando proyectos de restauración ecológica e investigaciones en ecología de la restauración. También como docente de la Universidad Distrital, Universidad Javeriana y la Fundación Internacional para la Restauración de Ecosistemas. Adicionalmente, se ha desempeñado como coordinador de proyectos de restauración para el Sistema de Parques Nacionales Naturales, la Secretaría Distrital e Ambiente y alcaldías municipales. De igual forma es miembro fundador de la Red Colombiana de Restauración Ecológica y la Sociedad Iberoamericana y del Caribe de Restauración Ecológica, donde se ha desempeñado como presidente y secretario de la junta directiva.



Jose Ignacio Barrera Catano

es vocal de Junta Directiva de SER-IAC. Es biólogo por la Universidad Nacional de Colombia, Maestro y PhD en Ecología por la Universidad Autónoma de Barcelona. Sus intereses de

investigación están concentrados en la restauración ecológica de áreas afectadas por especies invasoras, áreas afectadas por minería a cielo abierto y ganadería, principalmente. Desde 2002, es profesor de Ecología en la Pontificia Universidad Javeriana. En esta universidad, fundó la Escuela de Restauración Ecológica (ERE, 2002) y ha sido responsable, en

su sede de Bogotá, de la creación de la maestría en Restauración Ecológica (2015–2018), que coordina desde 2019. Fue coordinador del grupo de Restauración Ecológica del Jardín Botánico de Bogotá José Celestino Mutis (1998-2002), , miembro fundador de la Red Colombiana de Restauración Ecológica – REDCRE (2007), representante para América Latina de la Sociedad para la Restauración Ecológica-SER (2011- 2013), presidente de la Red Colombiana de Restauración Ecológica (2011-2014), miembro fundador de la Sociedad Iberoamericana y del Caribe de Restauración Ecológica – SIACRE (2013), presidente de la misma en el periodo 2013-2017 y su asesor permanente desde entonces hasta el presente.



Roger Villalobos Soto es vocal en la Junta Directiva de SER-IAC. Es un Ingeniero Agrónomo, costarricense, con una Maestría Científica del CATIE en manejo

integrado de recursos naturales, con énfasis en Manejo de Bosques Naturales Tropicales. Ha trabajado en investigación, asistencia técnica, educación de posgrado y formación de capacidades a profesionales y líderes comunales en temas como desarrollo rural, manejo forestal, gobernanza forestal, manejo de productos forestales no maderables y restauración de paisajes forestales. Luego de trabajar en el ámbito universitario y de la producción agrícola privada, desde 1991 es investigador del CATIE, donde ha realizado actividades en muchos países Latinoamericanos. Actualmente es investigador de la Unidad de Acción Climática del CATIE y Coordinador Académico de la Maestría en Manejo y Conservación de Bosques Tropicales y Biodiversidad. Ha sido coordinador y docente en cursos internacionales o realizados en diversos países, sobre sus temas de trabajo. Forma parte del equipo técnico de la iniciativa 20x20 de restauración para Latinoamérica, del directorio de la Sociedad Iberoamericana de Restauración, preside la Red Latinoamericana de Bosques Modelo y la Comisión Nacional de Sostenibilidad Forestal de Costa Rica.

SER-IAC: UMA SOCIEDADE INTERNACIONAL DE RESTAURAÇÃO ECOLÓGICA COM ESPÍRITO E FOCO IBEROAMERICANO E CARIBENHO

LEIA EM INGLÊS

A restauração de ecossistemas degradados é um processo complexo envolvendo muitos atores e disciplinas; dessa forma, deve ser o resultado de um trabalho coletivo inter e transdisciplinar.

O diálogo envolvendo diferentes campos do conhecimento para enfrentar os desafios da restauração ecológica nasce em espaços como Grupos de Pesquisa e Redes Temáticas. Na Região Ibero-americana e no Caribe, a busca de estratégias que apoiem a troca de saberes, a formação de parcerias e a interação entre pesquisadores tem sido feita pela constituição de redes de conhecimento, grupos e sociedades de Restauração Ecológica, que têm sido fundamentais no desenvolvimento da restauração ecológica na região e, em um nível particular, em países como Argentina, Brasil, Chile, Colômbia, Costa Rica, Cuba, Equador, México, Peru, Venezuela, Espanha e Portugal, entre outros.

As redes nacionais estabeleceram-se como uma forma eficaz de conectar todos esses atores e promover o diálogo necessário entre todos os grupos envolvidos nos diferentes níveis da restauração ecológica. No entanto, apesar de várias redes terem sido criadas na Ibero-América e no Caribe desde 2004, ainda há muitos outros países que precisam de alguma orientação para criar suas próprias redes.

No século XXI, o esforço para envolver os diferentes atores, ou partes interessadas, neste campo de conhecimento e ação, se refletiu em algumas iniciativas precursoras da Sociedade Ibero-Americana e do Caribe de Restauração Ecológica (SIACRE):

1. Em outubro de 2005, foi fundada a Rede Latino-americana de Restauração Ecológica (RED-

LEIA EM ESPANHOL

LAN), no âmbito de um Workshop realizado em Valdivia (Chile), com recursos do governo chileno para formar redes e fortalecer as bases teóricas e práticas de restauração. Os objetivos da REDLAN foram: promover pesquisas em restauração ecológica na América Latina e no Caribe; promover troca de experiências e conhecimentos entre pesquisadores e profissionais em nível regional; contribuir para o desenvolvimento de projetos e atividades colaborativas; promover o intercâmbio entre estudantes e profissionais por meio de cursos específicos; e aumentar as capacidades e habilidades da região. A REDLAN reuniu membros de 10 países: México, Guatemala, Equador, Costa Rica, Paraguai, Brasil, Chile, Argentina, Peru e Bolívia.

2. Em 20 de abril de 2007, foi fundada a Rede Ibero-Americana e do Caribe de Restauração Ecológica (RIACRE), durante o II Simpósio Internacional de Restauração Ecológica em Cuba, com o objetivo de integrar técnicos, cientistas, profissionais, conservacionistas, pessoas e instituições interessadas no tema da restauração ecológica e no manejo de ecossistemas na Ibero-América e no Caribe.
3. Em 2009, foi realizado em Curitiba (Brasil) o I Congresso Ibero-Americano e do Caribe de Restauração Ecológica, quando foi acordada a realização do II Congresso juntamente com a SER em 2011, em Mérida (México). Neste segundo congresso, em 2011, tanto a Rede Ibero-Americana e do Caribe de Restauração Ecológica (RIACRE) quanto a Rede Colombiana de Restauração Ecológica (REDCRE) assumiram o desafio de realizar o III Congresso Ibero-Americano e

do Caribe de Restauração Ecológica em 2013, em Bogotá, Colômbia.

4. Em 29 de julho de 2013, no âmbito do III Congresso Ibero-Americano e do Caribe de Restauração Ecológica, foi criada a Sociedade Ibero-Americana e do Caribe de Restauração Ecológica (SIACRE). A SIACRE surgiu da fusão da REDLAN e da RIACRE, e foi formada por representantes da Argentina, Chile, Costa Rica, Venezuela, Cuba, Bolívia, Peru, Espanha, Brasil, Equador, México e Colômbia. Sua fundação teve como principal objetivo promover a integração de pessoas e instituições interessadas no tema da restauração ecológica e do manejo de ecossistemas na Ibero-América e no Caribe.
5. Em 2014, a SIACRE foi formalmente constituída na Colômbia. Durante seu primeiro ano de atividade sua principal ação foi consolidar os canais de comunicação com seus membros ativos e potenciais. Para isso, estabeleceu seu website e criou um Boletim Informativo Trimestral. Durante 2015, a SIACRE focou na criação e fortalecimento das redes argentina, colombiana e chilena. No mesmo ano, organizou o IV Congresso Ibero-Americano e do Caribe de Restauração Ecológica, em Buenos Aires (Argentina). Ao longo do processo de construção e troca de experiências entre as redes e grupos de restauração ecológica de nossos países foram realizadas algumas reuniões, como o "Simpósio de Grupos e Redes", no Congresso SIACRE 2015. Em 2016, o trabalho teve como foco o fortalecimento das redes equatoriana e cubana, além de apoiar publicações científicas nas redes argentina, colombiana, chilena e mexicana e apoiar os congressos nacionais das redes colombiana e equatoriana.
6. Em 2017, a SIACRE se juntou à SER e à Sociedade Brasileira de Restauração Ecológica (SOBRE) para a organização da VII Conferência sobre Restauração Ecológica, V Congresso Ibero-Americano e do Caribe de Restauração Ecológica, e I Conferência Brasileira de Restauração Ecológica, em Foz do Iguaçu, Brasil. No âmbito deste congresso, a SIACRE organizou um workshop de grupos e redes em que participaram representantes das diferentes associações da Ibe-

ro-América e do Caribe: a Sociedade Brasileira de Restauração Ecológica (SOBRE), a "Rede Argentina de Restauração Ecológica" (REA), a "Sociedade Brasileira de Recuperação de Áreas Degradadas" (SOBRADE), a "Rede Colombiana de Restauração Ecológica" (REDCRE), a "Rede Chilena de Restauração Ecológica" (Restauramos Chile – RCH), a organização "Criando Redes" (Espanha), o "Grupo Cubano de Flora e Fauna para Restauração Ecológica" (GCFFRE), a "Sociedade Equatoriana de Restauração Ecológica", a "Rede de Restauração Ambiental" (REPARA-México) e a "Rede Venezuelana de Restauração Ecológica" (RVRE). Além da presença dos representantes das sociedades constituídas, houve a participação de atores de países da América Latina e do Caribe com pouco desenvolvimento na restauração ecológica. Durante o workshop, as grandes possibilidades de colaboração entre a SER internacional e a SIACRE ficaram evidentes. Desde então, a SIACRE e a SER vêm se esforçando para identificar uma estratégia que permita uma maior participação dos membros de cada sociedade e a integração entre ambas as sociedades, visando a fortalecer a coesão entre as redes locais e abrir canais mais práticos e eficazes de comunicação e intercâmbio em nível internacional.

7. Em 2021, com base nessas experiências preparatórias, e como resultado de reflexões internas dentro de cada sociedade e entre as sociedades, decidiu-se que a estratégia mais eficaz a seguir seria que a SIACRE mantivesse sua independência política, administrativa e financeira, ao passo em que se uniu à SER como seu capítulo Ibero-Americano e do Caribe, com o nome de SERIAC.

O novo capítulo, cujo nascimento comunicamos por meio desta breve resenha, tem como objetivo salvaguardar a identidade e as particularidades da região ibero-americana e caribenha em termos de condições naturais, socioeconômicas e idiossincráticas, ao mesmo tempo em que abre uma forma de intercâmbio e apoio mútuo com outras regiões do mundo através da SER Internacional. As diretorias da SIACRE e da SER celebram o nascimento da SERIAC como uma grande oportunidade de fortalecimen-

to mútuo e de suas capacidades de conhecimento, contribuindo para influenciar o desenvolvimento da restauração ecológica em escala global.



Pilar Andrés é a presidente da Diretoria da SER-IAC. É bióloga pela Universidade de Navarra (Pamplona, Espanha) e doutora em biologia pela Universidade Autônoma de Barcelona (Barcelona, Espanha), na área de Ecologia.

Especializou-se em ecologia do solo e nos serviços ecossistêmicos que o solo provê. Atualmente, é pesquisadora no CREA (Centre de Recerca Ecològica i Aplicacions Forestals, Barcelona, Espanha). Possui 30 anos de experiência na coordenação de projetos de restauração e manejo sustentável do território, especialmente em áreas degradadas pela agricultura e pecuária intensivas. Tem coordenado programas de longo prazo Europa-América Latina (programa ALFA da Comissão Europeia) visando à formação prática de especialistas em manejo do território para a minimização de sua vulnerabilidade frente a riscos ambientais, e tem coordenado o replanejamento socioeconômico e ambiental das regiões dos trópicos secos da América Central afetadas pela degradação da terra pela pecuária. Foi sócia-fundadora da SIACRE em 2013 e, desde então, vem exercendo diferentes funções em sua Diretoria.



Eduardo Arellano Ogaz, atual vice-presidente da Diretoria da SERIAC, é um acadêmico da Faculdade de Agronomia e Engenharia Florestal da Pontifícia Universidade Católica do Chile (PUC) e Pesquisador Principal do CAPES (Center of applied Ecology and Sustainability, Santiago, Chile). É engenheiro florestal, M. Sc. da Oregon State University e Ph.D. em Biologia Florestal da Virginia Tech, USA. Suas áreas de interesse são a conservação e recuperação das funções do solo (sequestro de carbono, reciclagem de nutrientes, biodiversidade, retenção de água) em sistemas agrícolas, em áreas afetadas por incêndios florestais e em área de mineração em reabilitação. Atualmente, está trabalhando no desenvolvimento de indicadores de saúde do solo para sistemas de produção de frutas e vinhedos na região central Chile e na Caatinga brasileira, e na restauração de áreas não produtivas na

paisagem da agricultura intensiva no Chile Central. Coordena um grupo de pesquisa sobre Intensificação Ecológica para o desenvolvimento de sistemas agrícolas sustentáveis no Chile (CAPES). É diretor de mestrado em Recursos Naturais na PUC e professor na área de ciências do solo, restauração ecológica e manejo de agroecossistemas.



Liliana Chisacá Hurtado, tesoureira da Diretoria da SERIAC, é uma bióloga colombiana, com mestrado em Planejamento e Administração do Desenvolvimento Regional.

Possui experiência em pesquisas com biodiversidade, restauração ecológica, serviços ecossistêmicos e governança ambiental em ecossistemas tropicais. Participou da construção e implantação de políticas públicas, elaboração de documentos técnicos sobre questões relacionadas ao manejo e gestão da biodiversidade, ações de restauração ecológica participativa, negócios verdes e inclusivos. Sua trajetória profissional tem se concentrado na execução de projetos socioambientais, capacitação em comunidades locais para definição e implantação de ações de conservação, restauração ecológica, cadeias de valor e agrobiodiversidade, principalmente em comunidades de pequenos agricultores (camponeses), afrodescendentes e comunidades tradicionais. É fundadora da Ecodes (2006), organização ambiental com atuação na Colômbia, Peru e Argentina, na execução de projetos socioambientais, nos temas reabilitação de solos contaminados, restauração ecológica participativa, compensação pela perda da biodiversidade, conservação, gestão integrada dos recursos hídricos, agrobiodiversidade, serviços ecossistêmicos, e ações de adaptação e mitigação das mudanças climáticas, entre outros. É fundadora da Rede Colombiana de Restauração Ecológica- REDCRE (2007) e membro da Diretoria (2013 – 2018). Também é fundadora da Rede de Restauração Peruana - REDPRE (2019) e da Sociedade Ibero-Americana e do Caribe de Restauração Ecológica- SIACRE (2013), e membro da sua Diretoria (2013 – 2022).



Mauricio Aguilar Garavito,

Secretário da Diretoria da SERIAC, é um ecólogo colombiano, mestre em restauração de ecossistemas e doutorando em conservação e restauração de ecossistemas. Especialista no

diagnóstico, elaboração de projetos e monitoramento de processos científicos e técnicos voltados à restauração de ecossistemas terrestres tropicais na escala de paisagem, populações e comunidades afetadas pela agropecuária, o desmatamento, por espécies invasoras e incêndios. Foi capacitado para a identificação de espaços prioritários para restauração, bem como para o estabelecimento de viveiros e a reprodução de plantas nativas. Perito em assessoria e acompanhamento de projetos socioambientais com comunidades rurais e com população vulnerável. Seu interesse é focado na capacitação e no desenvolvimento de pesquisas sobre a limitação do recrutamento de espécies nativas, a dispersão de sementes por morcegos em paisagens rurais e o papel das relações planta-planta e planta-animal na regeneração natural de “robledales, páramos e bosques andinos”. Nos últimos sete anos, tem trabalhado como pesquisador no Instituto de Pesquisa de Recursos Biológicos Alexander von Humboldt, coordenando projetos de restauração ecológica e pesquisas em ecologia de restauração. Atua também como professor da Universidad Distrital, Universidad Javeriana e Fundação Internacional para a Restauração de Ecossistemas. Além disso, atuou como coordenador de projetos de restauração do Sistema Nacional de Parques Naturais, na Secretaria Distrital e Meio Ambiente, e em prefeituras municipais. Também é membro fundador da Rede Colombiana de Restauração Ecológica e da Sociedade Ibero-Americana e do Caribe de Restauração Ecológica, onde atuou como presidente e secretário na diretoria.



Jose Ignacio Barrera Catano

é membro do Conselho de Administração da SERIAC. É biólogo pela Universidade Nacional da Colômbia, Mestre e Doutor em Ecologia pela Universidade Autônoma de Barcelona.

Seus interesses de pesquisa estão concentrados na restauração ecológica de áreas afetadas por espécies invasoras, áreas afetadas pela mineração a céu aberto e pela pecuária, principalmente. Desde 2002, é pro-

fessor de Ecologia na Pontifícia Universidad Javeriana. Nesta universidade, fundou a Escola de Restauração Ecológica (ERE, 2002) e foi responsável, em sua sede em Bogotá, pela criação do mestrado em Restauração Ecológica (2015–2018), que coordena desde 2019. Foi coordenador do grupo de Restauração Ecológica do Jardim Botânico de Bogotá José Celestino Mutis (1998-2002), e é membro fundador da Rede Colombiana de Restauração Ecológica – REDCRE (2007). Foi representante para a América Latina da Sociedade de Restauração Ecológica-SER (2011-2013), presidente da Rede Colombiana de Restauração Ecológica (2011-2014), membro fundador da Sociedade Ibero-Americana e do Caribe de Restauração Ecológica – SIACRE (2013), presidente da mesma no período 2013-2017 e seu conselheiro permanente de lá para cá.



Roger Villalobos Soto é membro do Conselho de Administração da SERIAC. É engenheiro agrônomo, costarriquenho, com mestrado científico do CATIE na gestão integrada dos recursos naturais, com ênfase no Manejo

de Florestas Naturais Tropicais. Atuou em pesquisa, assistência técnica, pós-graduação e capacitação de profissionais e líderes comunitários em temas como desenvolvimento rural, manejo florestal, governança florestal, manejo de produtos florestais não madeireiros e restauração da paisagem florestal. Depois de trabalhar no ambiente universitário e na produção agrícola privada, desde 1991 é pesquisador do CATIE, a partir de onde tem realizado atividades em muitos países da América Latina. Atualmente é pesquisador da Unidade de Ação Climática do CATIE e Coordenador Acadêmico do Mestrado em Gestão e Conservação de Florestas Tropicais e Biodiversidade. Foi coordenador e professor em cursos internacionais realizados em diversos países, em seus temas de trabalho. Ele faz parte da equipe técnica da Iniciativa de Restauração 20x20 para a América Latina, da diretoria da Sociedade Ibero-Americana de Restauração, e preside a Rede Latino-Americana de Florestas Modelo e a Comissão Nacional de Sustentabilidade Florestal da Costa Rica.

FAITS SAILLANTS DU PREMIER SYMPOSIUM SCIENTIFIQUE CONJOINT EN RESTAURATION ÉCOLOGIQUE DU GROUPE DE RECHERCHE SUR L'ÉCOLOGIE DES TOURBIÈRES ET DE LA SER-EST DU CANADA (QUÉBEC, CANADA)

Luc Bélanger¹, Claire Boismenu², Line Rochefort³, and Jeremy Lundholm⁴

1. coordonnateur SER-EC, 2. coordonnatrice du PERG 3. responsable du PERG et coprésidente du SER-EC, région du Québec 4. coprésident du SER-EC, région de l'Atlantique

LIRE EN ANGLAIS

Ce Symposium scientifique réunissait pour la première fois le Groupe de recherche sur l'écologie des tourbières (<https://www.gret-perg.ulaval.ca/>) et le SER-EC, soit le nouveau chapitre bilingue du SER pour l'Est du Canada (<https://chapter.ser.org/easterncanada/>). Cet événement, qui a eu lieu les 6 et 7 avril 2022, à l'Université Laval à Québec (Canada), portait principalement sur la restauration et la gestion des tourbières perturbées, mais aussi sur la restauration et la remise en état de divers autres types de milieux et d'écosystèmes (écosystèmes urbains, sites miniers et gravières de la forêt boréale, milieux humides d'eau douce et bandes riveraines le long des cours d'eau intérieurs, marais salants à marée et tundra du Haut-Arctique).

Près de 115 personnes ont assisté au Symposium

en personne ou à distance au cours duquel plus d'une trentaine de présentations orales ou par affiches ont été présentées tant en français qu'en anglais. Les présentateurs venaient du Québec et des régions de l'Atlantique, mais aussi d'ailleurs au Canada (Ontario, Manitoba, Alberta et Colombie-Britannique). La présence en personne et la magie des nouvelles technologies à distance ont permis à tous de ressentir la passion pour les nouvelles connaissances scientifiques, et les défis actuels et à venir en matière de restauration écologique de la part de tous les participants d'horizons divers, étudiants diplômés et jeunes professionnels ainsi que chercheurs et praticiens expérimentés. Pour n'en nommer que quelques-uns, Mika Little-Devito, étudiante à la maîtrise à l'Université de l'Alberta, a remporté le premier prix de la meilleure présentation d'étudiants (ou de jeunes diplômés) et de stagiaires postdoctoraux avec une présentation intitulée «Peat extraction activities: Does the extraction phase influence the export

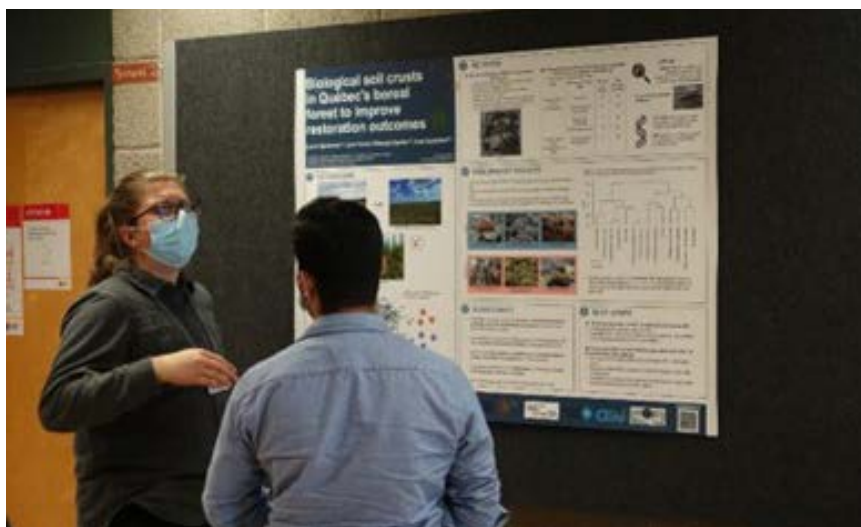
SER-Est du Canada était présent lors du Symposium avec un kiosque pour faire connaître ce nouveau chapitre et recruter des membres. (Crédit photo: M. Guêné-Nanchen — Université Laval)



of major chemical water quality indicators?». Pour sa présentation sur «Global warming is more likely than nitrogen deposition to promote a transition from moss-dominated to graminoid-dominated tundra in the High-Arctic», Charles Gignac, un récent diplômé (M.Sc.) de l'Université Laval, a remporté le prix de la deuxième meilleure présentation. En plus des résultats de divers projets de recherche scientifique, certaines présentations ont abordé le développement d'outils appliqués tels que des indicateurs écologiques simples pour évaluer le succès de la restauration des tourbières ou un guide pour l'élaboration d'un projet de restauration des milieux humides.

Les participants ont également eu le plaisir d'entendre des conférenciers invités. Le Dr Jonathan S. Price a parlé de l'apprentissage et de l'application des principes hydrologiques à la restauration des tourbières au Canada. Sa présentation portait sur les étapes et les embûches pour obtenir la bonne hydrologie pour les approches de restauration et les interprétations qui étaient nécessaires pour comprendre l'hydrologie des tourbières, et en particulier comment effectuer la restauration des tourbières. Plus précisément, il a mentionné que cela nécessitait une approche parallèle dans laquelle le comportement fondamental de l'eau dans la tourbe devait être établi, et comment cela était pertinent pour la dégradation des tourbières, et éventuellement, leur restauration. Le symposium a également été l'occasion de souligner le récent départ à la retraite de cet hydrologue bien connu de la restauration de l'Université de Waterloo.

Les écosystèmes de tourbières sont des leaders dans le stockage du carbone terrestre. La Dre Michelle Garneau (Université du Québec à Montréal) a parlé du potentiel de séquestration du carbone des tourbières boisées qui a été quantifié. Les résultats indiquent que les horizons tourbeux stockent plus de carbone que la biomasse aérienne et souterraine des arbres au cours de la même période. Dans une présentation intitulée «From the ground up: soil quality as the basis for functional built urban ecosystems», la Dre Alison Munson, de l'Université Laval, a présenté les résultats de projets de recherche de «verdissement» réalisés à Montréal et à Québec, et visant à évaluer des protocoles alternatifs et plus écologiques pour la gestion de la végétation le long des rues et des boulevards, y compris les impacts sur le microclimat (c.-à-d. problème d'îlot de chaleur). Enfin, le Dr Eric Higgs (Université de Victoria) a fait une présentation inspirante sur l'enjeu de «Where next for ecological restoration in Canada». Cela a permis aux participants d'en savoir plus sur les défis et les orientations/dimensions futures de la restauration écologique en tant qu'action prioritaire pour faire face aux crises écologiques et sociales résultant du changement climatique, de la dégradation des terres, de l'urbanisation et de l'extraction des ressources. Il a décrit les travaux récents visant à synthétiser les connaissances sur la restauration au Canada et a abordé les défis et opportunités émergents pour la restauration, y compris la résurgence autochtone, la nouveauté écologique et les orientations appropriées.



Close to 115 people attended in person or remotely to the Symposium during which more than thirty oral or poster presentations were presented. // Près de 115 personnes ont assisté en personne ou à distance au Symposium au cours duquel plus d'une trentaine de présentations orales ou par affiches ont été présentées. (Crédit photo: M. Guéné-Nanchen — Université Laval)

Considérant l'absence d'un guichet unique comme forum de discussion et d'outils de facilitation pour résoudre les problèmes liés à la mise en œuvre de solutions fondées sur la nature aux changements climatiques et au déclin de la biodiversité dans l'Est du Canada, SER-EC se consacrera au cours des prochaines années à accroître la restauration écologique dans le cadre d'un vaste projet stratégique intitulé : Le projet SLN : un outil de partage, d'apprentissage et de réseautage des connaissances scientifiques dans l'Est du Canada. Le symposium scientifique était bien aligné sur cet objectif plus large lié à la mission. Notez que toutes les présentations ont été entièrement enregistrées pour permettre aux participants enregistrés de suivre le symposium jusqu'à trois mois après l'événement (<http://www.gret-serec-symposium.org>). C'était aussi une occasion unique d'accroître l'adhésion de nouveaux membres à SER-EC, notamment en ciblant les étudiants diplômés et les jeunes professionnels. Le symposium s'est terminé par la première réunion d'organisation de ce nouveau chapitre afin de respecter les protocoles d'entente liés à la SER et les obligations légales des organisations canadiennes à but non lucratif.

SER-EC est également fier d'annoncer un autre événement important, à savoir une conférence conjointe avec la Canadian Land Reclamation Association (CLRA) du 11 au 15 juin 2023, lors de la troisième année de la Décennie des Nations Unies pour la restauration des écosystèmes (2021-2030). D'autres organisations telles que la section ontarienne de la SER (SER-O), la section canadienne de la Society of Wetland Scientists (SWS Canada), l'International Society for Horticultural Science (ISHS) et l'International Peatland Society (IPS) collaboreront également. Le thème proposé pour cette conférence est « De la réhabilitation à la restauration et au réensauvagement ». Ce sera une excellente occasion pour tous les membres de la SER, qu'ils soient des acteurs académiques, du secteur privé ou gouvernementaux, d'interagir et de présenter les derniers développements pour réhabiliter, restaurer et réensauvager divers écosystèmes, et de promouvoir la compréhension, la gestion scientifique et la durabilité de l'utilisation des sols organiques (zones humides, tourbières) dans l'agriculture et la culture hors-sol. Pour en être tenu informé, vous pouvez vous inscrire à l'infolettre du congrès RE3 au : <https://www.re3-quebec.org/fr>.



Le Dr Eric Higgs de l'Université de Victoria a fait une présentation inspirante sur l'enjeu de "Where next for ecological restoration in Canada". (Crédit photo: M. Guéné-Nanchen – Université Laval)

