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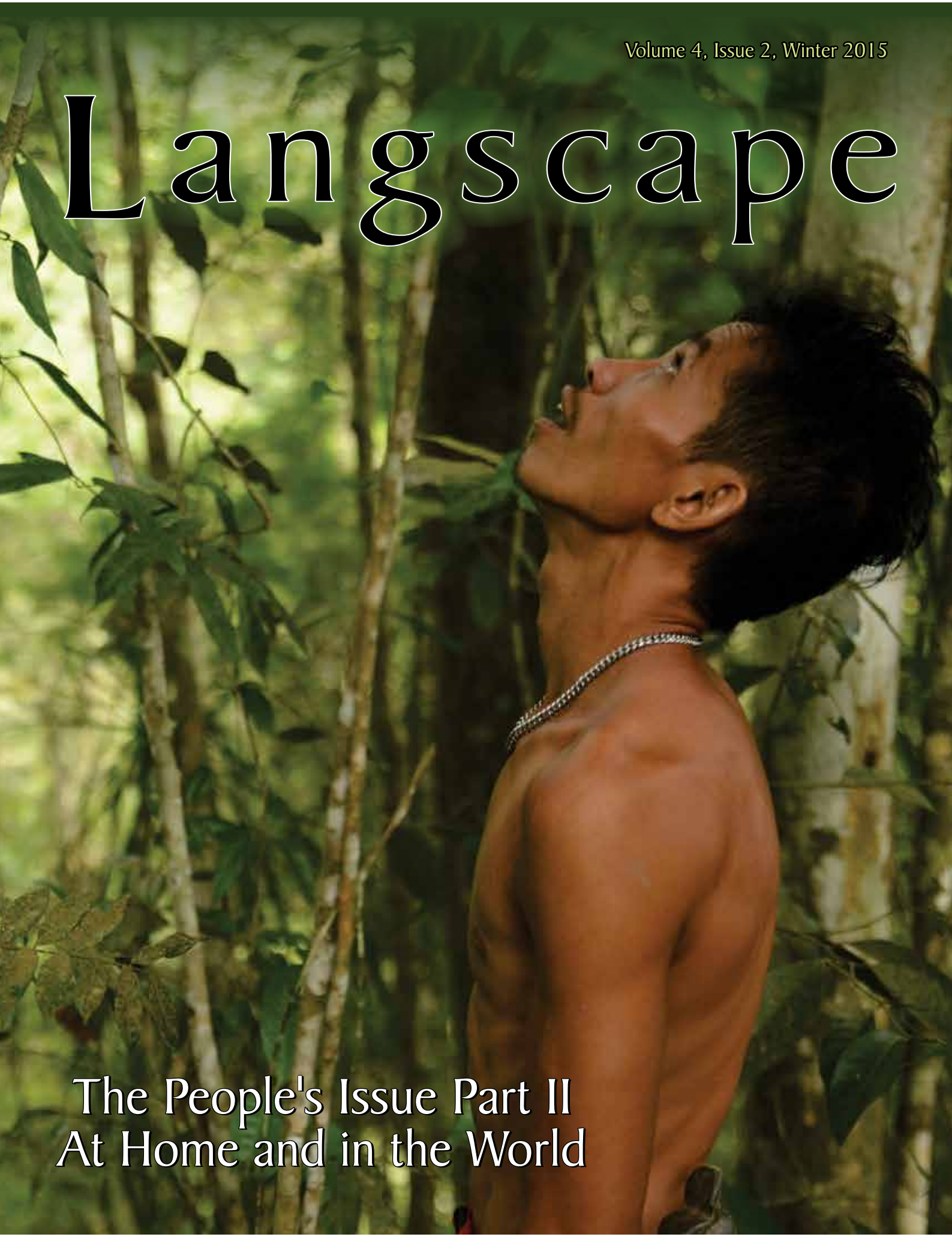
Langscape



The People's Issue Part II
At Home and in the World

Langscape is an extension of the voice of Terralingua. It supports our mission by educating the minds and hearts about the importance and value of biocultural diversity.

We aim to promote a paradigm shift by illustrating biocultural diversity through scientific and traditional knowledge, within an appealing sensory context of articles, stories and art.

ABOUT THE COVER PHOTOS

Front: *The Gamaran Protected Forest, West Sumatra, Indonesia*

Minangkabau forest worker Ramly gazes high into the canopy. His skills and traditional knowledge of the Gamaran Forest are possibly unmatched.

Photo: *J.J. Kohler, 2015*

Back: *Bahía Solano, Chocó District, Colombia*

It is important to involve primary school students in researching and surveying the territory. Three children look over the municipal seat of Bahía Solano from one of the highest points found in this region.

Photo: *Felipe Rodríguez Moreno, 2014*

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UNITY IN BIOCULTURAL DIVERSITY

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Langscape

Magazine

LANGSCAPE VOLUME 4, ISSUE 2, Winter 2015
THE PEOPLE'S ISSUE PART II: AT HOME AND IN THE WORLD

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Louder Than Words

Contributors

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Rachel is an award-winning social artist who integrates the power of singing and creative, contemplative practices into her workshops and training of progressive leaders. She is the creator of the poetic form Dekaaz Facilitation® and author of the book Divine Daughters: Liberating the Power and Passion of Women's Voices.

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Jeanine is a core associate professor of Environmental Studies at Naropa University in Boulder, Colorado, USA. A lover of nature, justice, and contemplative practice, her work intersects issues of social and ecological justice and the process individuals go through to reach heightened awareness and to translate this into positive change.

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Norma is a Research Professor, a biologist with a Master's degree in Educational and Social Development, a PhD candidate in Education, and Director of the research group "Biology Teaching and Cultural Diversity" at the National Pedagogical University of Colombia.

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Jordan Engel

Jordan is a cartographer and researcher at the Decolonial Atlas project, a virtual collaboration with indigenous peoples from around the world, which aims to bring together maps that challenge our relationships with the environment and the dominant culture.

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Beñat is studying for a Master's degree in Language Support and Revitalization at the School of Oriental and African Studies, University of London, UK. He is particularly interested in the Basque language, endangered languages, language rights, and language conflicts. He is also a person with deep ecological concerns.

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An environmental anthropologist, Felipe is the James and Joanne Love Chair in Neotropical Conservation and Director of the Las Nubes Project in the Faculty of Environmental Studies at York University, Toronto, Canada. He has worked with rural indigenous and peasant communities in Costa Rica for over twenty years.

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Mary Louise Pratt

Mary Louise is a scholar in the interdisciplinary humanities who has taught at Stanford University and New York University, USA. She works in Latin American studies, language studies, and the study of imperialism. Her best-known book is Imperial Eyes: Travel Writing and Transculturation (Routledge 1992; second edition 2008).

Felipe Rodriguez Moreno

Felipe is a graduate in biology education from the National Pedagogical University of Colombia, and a co-researcher in the research group "Biology Teaching and Cultural Diversity". He is interested in the relationship between nature, culture, and conservation of biocultural diversity in rural communities in Colombia.

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Sara is a socio-cultural anthropologist working in the Himalayan regions of Nepal, India, and China's Tibetan Autonomous Region. She is Assistant Professor in Anthropology and the Institute of Asian Research at the University of British Columbia, Canada. Her first book is Rituals of Ethnicity: Thangmi Identities Between Nepal and India (University of Pennsylvania Press, 2015).

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Heidi holds a Master's degree in Ethnobotany from the University of Kent, Canterbury, UK, and a Bachelor degree in Botany with a GIS minor from Weber State University, Ogden, Utah, USA. She works as the Botanist and Assistant Plant Curator for Red Butte Garden and Arboretum in conjunction with University of Utah, in Salt Lake City, Utah, USA.

Sonja Swift

Sonja is a freelance writer. She holds an individualized masters from Goddard College, with a thesis titled Bravery, Body, Land and Knowing. Writing is her creative medium for grappling with the complexity of our times. She calls home between San Francisco, California and the Black Hills in South Dakota, USA.

Irene Teixidor Toneu

Irene is a PhD student at the University of Reading, UK. She explored the transmission of knowledge about medicinal plant use among Tashelhit-speaking communities in the Moroccan High Atlas, in collaboration with the Global Diversity Foundation. Her studies are part of the European MedPlant project on the evolution and sustainable use of medicinal plant diversity.

Mark Turin

Mark is an anthropologist, linguist and broadcaster with over twenty years of fieldwork experience in the Himalayas. He is Associate Professor of Anthropology at the University of British Columbia, Canada, and serves as Chair of the First Nations and Endangered Languages Program. In addition, he directs the Digital Himalaya and World Oral Literature Project.

Bob Weeden

Bob was a wildlife researcher and a professor of Resource Management at the University of Alaska, Fairbanks, USA. Now retired on Salt Spring Island, British Columbia, Canada, he planted and tends a 3-acre orchard. He has long been a conservation activist, now volunteering with community projects such as the Salt Spring Island Conservancy, as well as with Terralingua.

EDITORIAL

Rebuilding Sense of Place

At Home, and in the World

Luisa Maffi

"Home is where you hang your hat", goes a popular saying in the English language. That is, home is where you make it to be, where you feel comfortable, regardless of where you were born or brought up. I can hardly think of a clearer expression of the existential condition for so many of us in the world today: "global nomads", not rooted in place but roaming around in search of opportunity, of a better life, somewhere else—some of us even making a point of not hanging our hats anywhere and being eternal wanderers, moving footloose from place to place to place.

For many, it's a matter of free choice. We can feel self-confident and even a bit smug about it. For many more, as we can see increasingly these days, it's not a matter of choice at all, but rather a desperate flight from environmental devastation, political turmoil, and economic hardship—three scourges much more closely tied to one another than we often are prone to believe. Those unfortunate people aren't leaving home of their own volition, but because life at home has become all but impossible for them and for their loved ones. As they flee at unfathomable risk, they leave behind all that they knew and that used to make them feel comfortable, secure, "at home". They leave behind their collective histories, their ways of life, their senses of identity. They look ahead to an uncertain, dislocated future. They go to join the "global nomads"—but in such a different, soul-shaking way!

It's easy to imagine the scars of this experience for migrants and refugees, the physical and psychic displacement that comes with it. But we tend to think that "we"—the ones who left home freely to call some other place, or no place, "home"—are somehow immune from any damage. We are inclined to believe that living in a rootless world, in a globalized culture, is a sign of the times, a sign of progress—that it's all good and the way things should be in this day and age. It's hard to realize what was left behind when we, or our families before us, chose to pull up stakes from a place we were rooted in and went to "hang our hat" elsewhere.

But what does the idea of sense of place have to do with that of biocultural diversity, which Terralingua stands for? When people look at our world maps that show the overlaps between biological and linguistic diversity, they often ask: "OK, I do see the global patterns, but how did they actually come about?" The answer, in a

nutshell, is simple: from myriad senses of place. Generation after generation, each human society built its distinctive way of life within a specific ecological niche. It developed and transmitted its sense of place, made up of intimate connections and interactions among people and between people and the natural world of which we are part. That tapestry of diverse local adaptations, reflected in our diverse languages and cultures, is what global biocultural diversity is made up of.

But that was when most people were "ecosystem people", as geographer Raymond Dasmann once put it—human communities living within the confines of, and in dynamic balance with, local ecosystems. Now more and more of us have become what Dasmann called "biosphere people"—placeless cosmopolitans laying claim over the entire globe, while having lost the sense of connectedness and the local knowledge and skills that we would need to care for our biospheric home. The consequences are everywhere to be seen, at home and in the world.

"We resist thinking that we will live and die on the same errant planet, a planet that is being systematically destroyed by our neglect and cannibalistic attitude," says Beñat Garaio Mendizabal, one of this issue's contributors. As both a Basque and a citizen of the world, and as a young person, that's not the world Beñat is looking forward to. And it is worth reflecting on the word he used: *errant*. To "err" is both to wander away and to go astray. Whether we did so by choice, or because we felt we had no choice, we have wandered away from our deep, ancestral links with place—and in so doing, as a global community we have gone astray.

Regardless of what we gained, or think we gained, by breaking our ties with home, what did we lose? What does the something that we lost have to do with our deep contemporary troubles? And how do we recover that lost something and take a proud, hopeful step toward a better world? The articles in Part 2 of *Langscape's* "The People's Issue" series have spontaneously come together around the theme of sense of place, and address these questions in a fascinating variety of ways.

In the "Ideas" section, **Sonja Swift** explores the concept of "embodiment" as a way of expressing the profound body-land connection that occurs when we are *"in contact with living landscapes"*, and argues that drawing that connection—or more broadly making a link between the biological and the cultural—*"has been and continues to be an act of rebellion."* In a similar vein, **Bob Weeden** envisions—and indeed welcomes in—an "Age of Restoration," in which a people's movement, led by "country minds" and guided by traditional knowledge, will rise up to restore health to the land, and in so doing will also restore healthy relationships of people with the land.

In a more metaphorical sense, **Cristina Muru** considers what it takes to feel "at home" in an intellectual space between the sciences and the humanities, and between scientific and traditional knowledge. It is in such an interdisciplinary and mutually respectful space, she feels, that a fruitful dialogue can take place—a dialogue that is both about and draws from biocultural diversity, leading to greater understanding of and support for the diversity of life in all its forms.

In her mood piece for "Reflections", **Mary Louise Pratt** muses on her own sense of place in a corner of the world she has loved, and lived in part-time, since early childhood—and on the hard discovery of the disruptive and painful social and environmental history that lies behind what she thought she knew about the place. In turn, **Jeanine M. Canty** takes off from just such a contemporary reality of brokenness and disconnect from place and identity, and reflects on the work that she and other women are doing to create new "edges of awareness and transformation" that can lead to ecological and social healing. Photos by **M. Jennifer Chandler** and poems by **Rachel Bagby** beautifully complement her article.

The "Dispatches" section brings us examples of how people at the four corners of the world respond when their sense of place is undermined by forces that radically transform their "home"—the very places out of which that feeling of belonging is created. Sometimes, as is the case with this year's Nepal earthquakes, it can be natural forces of such a magnitude, that there's no defense against them. In their article, **Sara Shneiderman** and **Mark Turin** portray the devastation the earthquakes brought about in the indigenous Thangmi communities of Nepal, with whom they work, and show how these tragic events have challenged *"traditional understandings of land, territory, family and the environment."* A full set of pictures illustrating the earthquake's aftermath and people's courageous response is available as a web-only extra on the *Langscape* site.

In other cases, the disruptive force is human action, which intervenes to appropriate, or modify the use of, the land that local people call home. This was so for the Udege people of the Russian Far East, **Aleksandra Bocharnikova** tells us. The Udege put up a brave fight to prevent their traditional territory from becoming a protected area from which they would be excluded—something that would have inevitably brought an end to their customary way of life. Their fight made history in Russia, by prompting a change in law that now makes the goal of establishing national parks *"protection, not only of nature, but also of indigenous communities living in the territory".*

There are other ways, too, in which community action can turn protected areas into sources of benefit for people's livelihoods and well-being, as well as for biocultural diversity conservation. **Tom Corcoran** brings us the story of the Minangkabau people of West Sumatra, Indonesia, and how they are moving away from participation in logging toward establishing community-led ecotourism within the Gamaran Protected Forest. In the process, they are revitalizing and revalorizing traditional knowledge, and thus also creating a *"protected area of the mind".* **Felipe Montoya-Greenheck** takes us to Costa Rica to learn about a project that has been devoted not only to establishing an important biological corridor to protect a tract of rainforest, but also to ensuring that the local *campesinos* (peasants) can maintain and enhance their productive activities as well as their *"their sense of place and rootedness, and above all … their love for the land."*

Often, social and environmental transformations go hand in hand, eroding both traditional knowledge and the cultural landscapes that people call home. In the High Atlas Mountains of Morocco, **Irene Teixidor Toneu** finds that a combination of ecological degradation and changes in the local Berber communities' way of life is threatening the conservation of medicinal plants and the related knowledge, thus posing a risk for people's health and well-being. Through participatory consultations, the community comes up with a viable solution: growing medicinal plants in flowerpots. Among the Maasai in Tanzania, traditional medicinal knowledge is also under threat, particularly among youth, who generally have to travel far away from home to get their schooling. Working with elders and teachers at a one-of-a-kind rural secondary school, **Heidi Simper** probes the value of introducing direct experience of healing rituals in the curriculum to foster the transmission of that invaluable knowledge.

Erasing sense of place is very much a part of the colonialist project that began in the so-called "Age of Exploration" and continues to this day with globalization. The articles in "Action" bring up some of the activist responses that this planned erasure evokes. **Jordan Engel** points to the ways in which mapmaking has been an instrument of empire, particularly through the overlaying of place names that don't reflect in any way the ecological and cultural history of a place and the relationship of the original people with the land. His "Decolonial Atlas" project is a remarkable collaborative effort to build alternative maps that *"challenge our relationships with the environment and the dominant culture."* **Beñat Garaio Mendizabal** contemplates what's happening in Basque Country today, and calls for environmental and language activists to join forces. Linking "green" struggles and language struggles, he argues, can help stave off the rapid "modernizing" changes that, by both destroying the landscape and jeopardizing the continuity of the Basque language, are threatening the biocultural uniqueness and integrity of his beloved home.

As always, images speak "Louder than Words". In the section by that name, the photo essay by **Felipe Rodríguez Moreno** and **Norma Constanza Castaño Cuéllar**, richly illustrated with Felipe's pictures, brings us a story of recovery of both territory and sense of place in a biologically and culturally diverse fishing community on the Pacific coast of Colombia. Bahía Solano has been deeply transformed, socially and ecologically, by decades of planned immigration of farmers. With their educational project, Felipe and Norma seek to *"promote community empowerment and a sense of ownership of the territory among students and the community,"* fostering pride of place and stewardship in both youth and adults.

As Indigenous writer and educator Jeannette Armstrong eloquently puts it, *"without that deep connection to the environment, to the Earth, to what we actually are, to what humanity is, we lose our place, and confusion and chaos enter"* ("I Stand with You Against the Disorder", *Yes! Magazine,* Winter 2005-2006). Reading the articles in this *Langscape* issue against the somber background of current global events, I recognize the challenges of building a future in which we can all experience the groundedness that comes from having roots firmly planted in our local "home". Yet, at the same time I am filled with hope that, by starting "at home", we can get on the way toward a mutually respectful and deeply connected existence in our larger "home"—a bioculturally rich and thriving biosphere.

Cordially,

Luisa Maffi
Langscape Editor
Co-founder and Director,
Terralingua

Mirroring the Land:

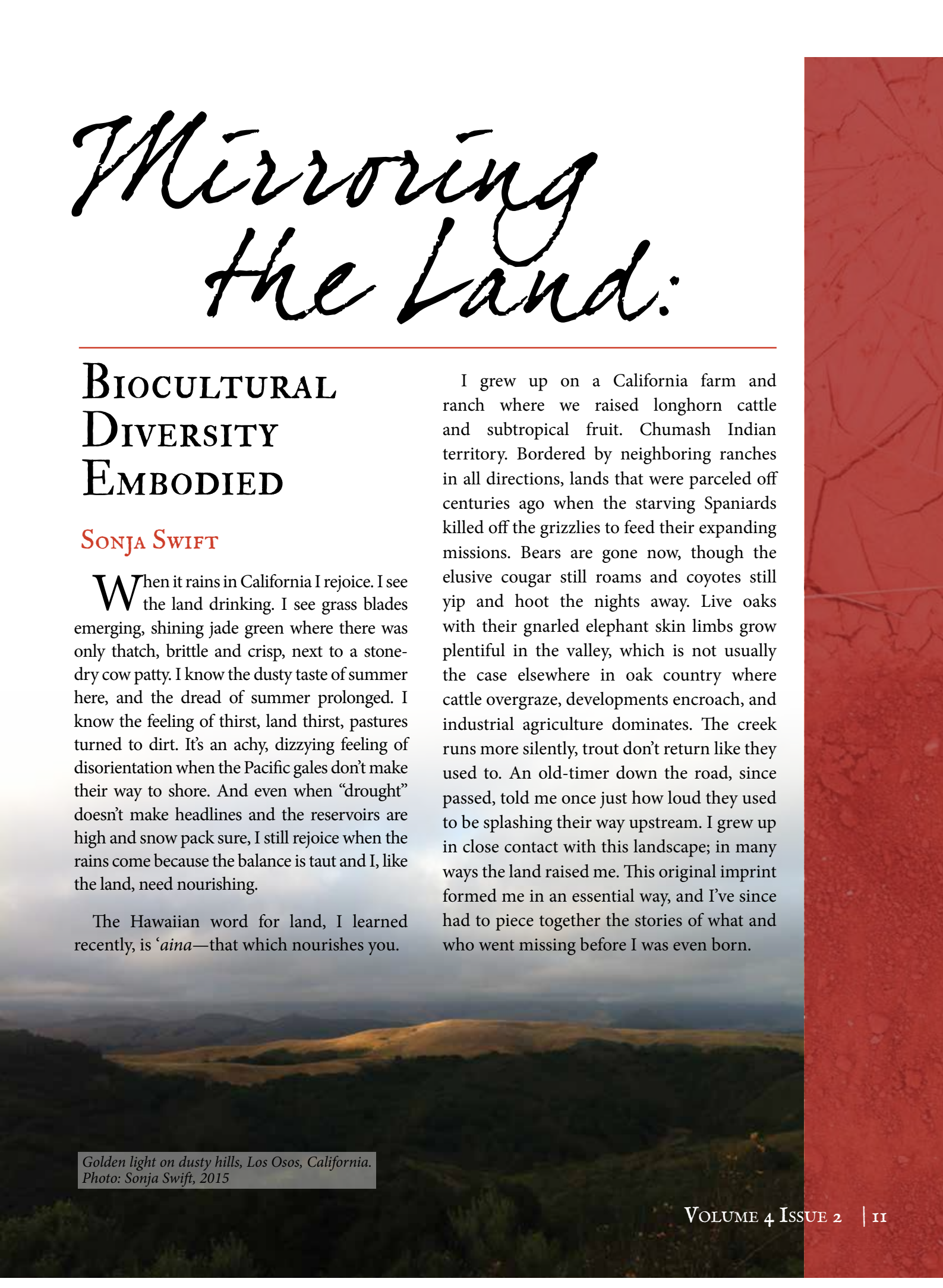
Biocultural Diversity Embodied

Sonja Swift

When it rains in California I rejoice. I see the land drinking. I see grass blades emerging, shining jade green where there was only thatch, brittle and crisp, next to a stone-dry cow patty. I know the dusty taste of summer here, and the dread of summer prolonged. I know the feeling of thirst, land thirst, pastures turned to dirt. It's an achy, dizzying feeling of disorientation when the Pacific gales don't make their way to shore. And even when "drought" doesn't make headlines and the reservoirs are high and snow pack sure, I still rejoice when the rains come because the balance is taut and I, like the land, need nourishing.

The Hawaiian word for land, I learned recently, is '*aina*—that which nourishes you.

I grew up on a California farm and ranch where we raised longhorn cattle and subtropical fruit. Chumash Indian territory. Bordered by neighboring ranches in all directions, lands that were parceled off centuries ago when the starving Spaniards killed off the grizzlies to feed their expanding missions. Bears are gone now, though the elusive cougar still roams and coyotes still yip and hoot the nights away. Live oaks with their gnarled elephant skin limbs grow plentiful in the valley, which is not usually the case elsewhere in oak country where cattle overgraze, developments encroach, and industrial agriculture dominates. The creek runs more silently, trout don't return like they used to. An old-timer down the road, since passed, told me once just how loud they used to be splashing their way upstream. I grew up in close contact with this landscape; in many ways the land raised me. This original imprint formed me in an essential way, and I've since had to piece together the stories of what and who went missing before I was even born.



Golden light on dusty hills, Los Osos, California. Photo: Sonja Swift, 2015

Live oaks, Los Osos, California. Photo: Sonja Swift, 2015

The sunburnt summer thatch I grew up with, that in times of drought makes California rangelands look like sand dunes, is a direct result of the early Spaniards and Portuguese thinking California was Spain or Portugal and treating the land as they were used to treating their homelands back in Europe. So commenced the overgrazing on hills that weren't accustomed to horse hooves and such condensed numbers of cattle, loss of perennial species replaced by annuals, and the dismissal of fire as a tool for tending landscape. Disregarding the stewardship and ecological know-how of the locals, in this case the Chumash and Salinian people, wreaked havoc on the landscape.

Managed, tended, intimately known biodiversity is what Europeans interpreted as wilderness, or as nature presumably unspoiled by human touch. Separating people from nature, they displaced a worldview that many now seek to recover, and that the term "biocultural diversity" attempts to reflect—a term that is crucial for re-framing, while in a way it is also artificial, as it bridges an imposed and deeply misguided split. Treating the land as if it were something God-created that was there for the taking was convenient, and also cruel. California has a very bloody history that still requires deep investigation and honoring, in a far more thorough way than I can do justice to here. I will say that I yearn daily to see California before it was California, when this landscape on the western edge of North America was tended to knowingly by the aboriginal peoples of these lands.

"I grew up in close contact with this landscape; in many ways the land raised me."

My people don't come from the place I was raised in. My mother is a Dane and my father grew up in the city of Los Angeles. I am learning how to name my own sense of belonging and land-based worldview. Lacking any place-based cultural guidance, in many ways I've started over. I don't know the feeling of this as a shared experience, where generations upon generations still occupy the very landscape where their ancestors are buried, where their legends took place and creation stories originated. The old ways of my people are buried deep in black soil, beneath amber hunks and rye stalks, in stones and blood, beyond the eastern edge of this continent in

the northern hemisphere on the other side of the Atlantic Ocean. What I do know is what it feels like to grow up on a land base and to be the wide-eyed child who forges a life-long alliance with place. I know this original experience of love.

As people we are molded, hewn, carved by the landscapes we inhabit, we are part of the land, and there is no changing that. These places inform, educate and mirror who we are, whether in sickness or in health. That is why, when people lived in more land-based ways, the world had many more languages, more nuanced and diverse cultural traditions and land-specific ceremonies, and more hand-selected, propagated and expertly tended grasses, trees, seeds and food crops than we've got today. Pave the land, demolish the land, desecrate and poison and plunder the land, and perception is plundered as well. We need open land in order to learn how to see, know, and experience beauty. This is no superficial recreational need, but a need in the same way as we need home, food, clean water, and meaning. To say this more exactly: in the deepest sense, we are only as intelligent as we are in contact with living landscapes.

Embodiment studies philosopher, Ellie Epp, gave me a framework for naming the essentiality of this. She writes: "*The destruction of beauty, of complexity, of physical coherence, all of these are forms of destruction of mind, that is, of practices of intelligence that depend on the flourishing of the natural world.*" In other words, without intact landscapes in which humans can participate, they will become only more dead to the world—or die of broken hearts. To destroy the physical coherence of intact ecosystems is to destroy our multi-faceted means and very potential for high, coherent intelligence. It is a re-framing of the argument for the preservation of nature that Epp offers. The importance isn't isolated to protecting the sequoia or wolf, or otherwise for one's liking as a recreationist. No, it is deeper than that. "*It's a worry about minds that don't have enough world in them. Minds that don't have enough world in them are wrecking the world, but they are also wrecking themselves.*"

Lone coyote, Death Valley, California. Photo: Sonja Swift, 2015

Flowering through concrete, California. Photo: Sonja Swift, 2015

Fence posts and full moon waning, California. Photo: Sonja Swift, 2015

This is a political statement in and of itself and one that further undergirds the irony of big-money conservation or corporate greenwash initiatives kicking indigenous people off their homelands under the guise of a wildlife corridor or "carbon-offset" project, functioning from the same old colonial segregation

Egret over Pacific blue, Morro Bay, California. Photo: Sonja Swift, 2015

of biological from cultural—the very split that the term biocultural seeks to repair. One might otherwise consider that the people molded by the landscapes that others seek to safeguard are the ideal caretakers for that landscape, because their knowledge and perception originate in direct response to that place.

Isak Dinesen, aka Karen Blixen, writing about Africa in the early 1900s, expresses embodiment science by describing how land-stealing is robbery of more than one's land: "*It is more than their land that you take away from the people, whose Native land you take. It is their past as well, their roots and their identity. If you take away the things that they have been used to see, and will be expecting to see, you may, in a way, as well take their eyes.*" What people grow up seeing is what they are then physically structured to go on seeing. In the words of author Hugh Brody: "*The clearing of minds is inseparable from the securing of lands. And the loss of words that hold history, knowledge, and heritage devastatingly compounds all other forms of dispossession.*" Like the act of stealing land, destruction of landscapes is another way of making people go blind with displaced fury and a lost sense of self.

There is a nuclear power plant appropriately named *El Diablo* that is situated some 30 miles as the crow flies from my home ranch. California is known for earthquakes, and they've located a fault a few miles off the coast from where radioactive waste is being stored. A few years ago, when I was back living there, I stood up at a community meeting called to discuss prolonging the operations of this plant and said: "*I live up Clark Canyon. I was born and raised there. It is my home. And, you know, we've got a siren that PG&E [Ed.: the local power company] tacked up to one of those power lines that run through our valley. It hangs there, blank white, a reminder. Should that siren ever start blaring it means one thing: that we've got to run like hell and never come back.*"

Territory, like body, is essential in its entirety, its wholly integrated health. Robertico taught me that. Roberto Marin Noreña, a Barasana elder and ~Kubu (one who cures the season/shaman) had to patiently explain to the Colombian Minister of Culture that *He Yaia Keti Oka,* his people's worldview, is like a body, and protecting just the head or foot is not good enough. The discussion at the time had been around the matter of officially recognizing the cultural patrimony of the Barasana, Tatuyo and Makuna tribes who live along the Pirá Paraná River in the Northwest Colombian Amazon, as the minister had only been thinking in terms of a single traditional dance rather than the entirety of a complex worldview rooted in territory. So Roberto traveled to Bogotá to help enlighten the minister and explain that *He Yaia Keti Oka* cannot be compartmentalized; one must protect the body, hence the territory, as a whole. In this way, official recognition of cultural patrimony for the people on the Pirá Paraná and the safeguards that come with it would extend to the land underfoot, at threat from gold mining interests.

"Drawing connections between body and land—or otherwise biological and cultural—has been and continues to be an act of rebellion."

His explanation proved successful, and after many long community meetings cultural heritage was granted by UNESCO for a worldview, and hence a region. While mining threats persist, this framework stands as a powerful example, and one that has helped me articulate what it is I value about the patterns mirrored between body and land. When culture reflects landscape, and lives in sophisticated contact with landscape, life exists in balance. Rivers run clean. Forests stand tall. Wild game and fish are plentiful. People are healthy. But when culture denies the way we mirror one another, or forgets to care, or permits access only to the economic elite, then things run astray. Tap water ignites. Food crops are poisoned with war chemicals. Forests get razed. And as a people we all suffer. In the farthest northern reaches, reindeer are eating lichen soaked in radioactive fallout. On windowsills in San Francisco, coal dust accumulates, blown in on westerlies from China. We're all in this together.

To disregard diversity, favoring blueprint plans for the next suburb or oil field, is to regress, to be absurdly unimaginative. It is to limit one's very potential. A sterile, exhausted landscape, a bombed and desiccated city, creates a parallel kind of mind—a traumatized mind. Intelligence and creativity rely on contact with the exquisite complexity of the web of life that surrounds us, and there is nothing as complex, detailed, and minutely stunning as the evolutionarily adapted, coherent complexity of this planet. The intoxicatingly red earth of a dry creek bed imprinted with cougar tracks, the myriad colors and textures of prairie grasses that make an autumn walk feel like one has entered a trance, the nuanced and multi-colored variations of Andean potatoes, the sound of a wolf's howl echoing.

Land-based embodied knowledge is the very intelligence exiled by rampant industrialization and the technological age. This fierce knowing stands in the way of systems built on exploitation and dependence. This is why drawing connections between *body* and *land*—or otherwise the biological and the cultural—has been and continues to be an act of rebellion.

Further Reading

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Country Minds
and the Age of Restoration

Bob Weeden

I often think about this marvelous planet, both the place we call home and the world beyond our personal experience. I think in words and pictures. The words are about a wrong turn we made somewhere, unknowingly and with good intentions but bad consequences. The consequences to people are crowding, inequality, unfairness, despair, and violence. The consequences to the land are poisoning, extinction, less life, and the triumph of sameness over variety. The words are about a basic truth: when humanity is sick, the land is sick; when humanity is well, the land is well.

When I think in pictures I see a shallow pond full of life. Bullfrogs have taken over. They gobble everything in sight and shout "MORE! MORE! MORE!" At the edge of hearing, mid-sized voices call "Cool It! Cool It!" Many voices murmur like tiny tree frogs: "Hope! Hope! Hope! Hope!"

News media report on the world's ills and the bullfrogs' croaks very thoroughly. Where is the good news? It's there if you look. Some comes as a reaction to the bad, as when billions of dollars for marsh restoration in the southern USA followed B.P. Deepwater Horizon's disastrous oil well blowout in the Gulf of Mexico. There are events more positive and hopeful than the "small good from big bad" sort, too. British and North American economists have joined in two decades, so far, of work to figure out an economy based on stability, not growth: in effect, taking the voice from the bullfrogs. In Kansas, The Land Institute is celebrating 35 years of a project to create an agriculture founded on a mixed-species culture of now-wild perennial grains to replace the annuals (wheat, corn, soybeans, etc.) that we grow at huge cost in soil loss and ecological impoverishment.

The Age of Restoration at Home #1: Volunteers stabilize an eroding creek bank on the Salt Spring Island Conservancy's new Blackburn Lake Nature Reserve on Salt Spring Island, British Columbia, Canada. Photo: Laura Matthias, 2015.

The Age of Restoration at Home #2: The erosion of the creek bank at Salt Spring Island's Blackburn Lake Nature Reserve stemmed from cut-and-fill work by the golf course that owned the land until 2014. Photo: Laura Matthias, 2015.

Those are visionary projects. There are thousands of local, practical ones. People are removing hundreds of unused and dangerous dams and returning streams to their ancient flows. Others plant native streamside vegetation to stabilize cow-damaged banks. Others set out nest boxes for bluebirds in places where fire and logging have eliminated the birds' traditional sites in dead trees. Examples are everywhere, as varied as the land and our use of it.

People want to restore the land to good health. We've begun, and find joy and profit in the work. Will politicians follow where citizens lead? Will we declare an Age of Restoration, putting earth care on equal terms with other primary issues of the day? I think so. I think there is a better chance of that, than of continuing as we are. Bullfrogs soon will be an endangered species.

City and country alike need restoration. Cities need re-conceiving and rebuilding after over two centuries of industrialization, phenomenal growth, and unequal sharing of the temporary profits of that growth. Countrysides need physical and biological renewal after city money and power pillaged them. More than that, they need re-inhabitation, by which I mean the multigenerational processes that transform a geographical area into a home as understood, respected, and loved as a personal life partner can be.

"Where is the good news?
It's there if you look."

Maybe I should elaborate a bit. In North America, the land was the First Nations' early and millennial home. It was the first environs of European settlers. Industrialization sucked resources into cities, making the countryside less habitable. For two centuries many country people could (and can) find work only in cities or in service to city growth. After World War II, a lot of well-off city

people came to the country to retire or for seasonal pleasure, a process that enlarged rural populations without reversing the decline in true inhabitation. Today, "dot.com" work, always disdainful of roots, continues that decline.

As well, a deluge of city models and ideas has flooded the minds of rural people, young and old, through all-pervasive media. No one is immune to its influence, or even given a chance to think about a balancing view. Young people living in the countryside often seem to have the same ideas and wants as youngsters in the city, except that rural youth know less of the cities' reality. First Nations people, too, have often followed this path.

The upshot is that rural populations, whether locally bigger or smaller than a generation or two ago, have less country knowledge and less deep-down love of country places than ever before. This is a serious problem, if we are to make a good start on an Age of Restoration. What can we do? As an old teacher I immediately say to myself, "Change what schools teach and how they teach it." But I have doubts that schools are the place to start. Jobs are.

Taking restoration seriously means changing the flow of money in our economy. That's easy. I've seen changes like that before when peacetime production became war production in the 1940s, during the post-war revolution in transportation construction, and in water and air cleanup in the first decades of environmentalism. Political will could finance restoration without missing a beat.

If, however, we want country people to be more than bodies doing the will of city people, new money needs to be accompanied by new attitudes and policies. Too many rural jobs today are dead ends or stepping-stones into the city. Country restoration inevitably is a partnership process involving city and country people, with the latter taking on the bigger responsibility for directing and doing. In such a partnership, rural people's participation

The Age of Restoration at Home #3: Signs of hope at Blackburn Lake Nature Reserve. Photo: Laura Matthias, 2015.

will—if governments and businesses do their bit—mean a great deal: much broader horizons for local work, work involving professional as well as manual skills, planning and design capabilities, leadership abilities, and, in general, the exercise of talents, responsibility, and creativity that are now as scarce as hens' teeth in small town and rural North America. With such prospects, more rural youth will stay home, ensuring the re-establishment of country knowledge and capacities that are now in serious jeopardy.

"Taking restoration seriously means changing the flow of money in our economy. That's easy... Political will could finance restoration without missing a beat."

Some rural regions in North America have substantial First Nations communities. They are lucky. Some First Nations people still possess highly valuable treasures of wisdom from many generations past that show up as canny insights into current situations. I well remember when, during the building of the oil patch on Alaska's North Slope in the 1970s, the National Marine Fisheries Service announced worriedly that bowhead and grey whale numbers were very low. Their biologists had come to that conclusion after studying satellite photos of leads in spring ice and flying aerial surveys. Inuit from villages at Point Hope, Wainwright, Barrow, and Kaktovik, who had continued traditional whale and seal hunts, thought there were more—not lots, but more. The Bureau looked again. The Inuit were right.

All too often, traditional knowledge, no longer renewed each generation, clings precariously to existence in the minds of the elderly. They often express it best in their traditional language. Usually their children and grandchildren understand imperfectly. Worse, the old knowledge seems irrelevant to them. In fact it is not at all irrelevant, and will be even more valuable in a time of restoration of the land where the old language evolved. Traditional languages have a future.

The important thing is for minds thinking in any and every language to recover the place-centered attentiveness by which traditional First Nations languages served people so well. Maybe it is English that needs to change, having been modified during three centuries when industrial cultures were headed in what we now know included disastrous directions.

I'm sure English is up to the job. English has coped with huge changes in its centuries as an important language. There is no reason it can't take the Age of Restoration in stride. One day, perhaps, it will help us get along in our world as successfully as traditional languages have done in their long reign. It is even possible that as we live attentively and lovingly in places as different as tundras, forests, and prairies, the imperialistic homogeneity of English will develop regional usages and vocabularies to fit their diversity.

If such a time comes, I hope we tip our hats in respectful acknowledgement that our ancestors pioneered that path.

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At Home Between Sciences and Humanities:

Biocultural Diversity as Source and Object of Interdisciplinary Dialogue

Cristina Muru

As main players in the academic debate, the *Sciences* and the *Humanities* have started a dialogue only in recent years. Until a few decades ago, the science, technology, engineering, and medicine sectors (STEM) and the humanities, arts, and social sciences sectors (HASS) largely ignored one another, having traditionally followed different aims and methodologies, which in turn have led to separate playing fields for discovery and interpretation. Today, this trend seems to have changed, and the dialogue between STEM and HASS has been growing, along with a stronger desire to move toward a pan-disciplinary synthesis. Nevertheless, obstacles and dead-ends are still at play on the way toward an effective collaboration. Why does this happen?

As an academic, I believe that it depends on the way we are trained. Indeed our disciplinary specializations shape our identity as scholars, as well as our ways to process the world within and beyond our academic disciplines. In fact, as scholars we tend to place ourselves within particular theoretical frameworks to which we often refer in order to design our research and interpret our data. Even when we proclaim our will to collaborate with others from different disciplines, we still feel as if we belong to a specific scholarly realm and find it hard to actually overcome our disciplinary fences.

As a linguist (and then a humanist), I sometimes have trouble understanding how scientists study the natural world—in particular, when they seem to overlook the in-depth knowledge of the natural environment held, for instance, by small ethnic groups, such as the ones I work with in Southern India. Although small ethnic groups are likely to retain great knowledge about the local environment and natural systems, scientists often fail to take their knowledge into proper account, and often dismiss the contribution humanists can give in recognizing other groups' enviromental knowledge. In turn, humanists tend to disdain the scientific side of the humanities and sometimes ignore the social values to which they can have access through languages.

The Nilgiris or Blue Mountains, one of India's biodiversity hotspots, with diverse endemic fauna, flora and languages. Nadugani, Nilgiris, Tamil Nadu. Photo: Cristina Muru, 2012

Does it have to be so difficult for STEM and HASS to work together? No, it doesn't. In order to achieve an effective and collaborative interdisciplinary dialogue as well as positive academic results, we should all be willing and inclined to free ourselves from the "disciplinary-based assumptions" from which our preconceptions often stem. We should be ready to wear each other's glasses, and above all we should start adopting a kaleidoscopic perspective—in other words, an interdisciplinary approach. By interdisciplinarity I do not mean the effort to create a new discipline with its own labels and boundaries. Rather, I refer to a coherent approach that looks at real-life problems from multiple perspectives, allowing us to gain a more comprehensive, multifaceted, and in-depth understanding of society. In order to (dis)solve the boundaries between STEM and HASS, we should forget about "disciplines" and start thinking in terms of "scientific interdisciplinary communities of practice".

> *"Our disciplinary specializations shape our identity as scholars, as well as our ways to process the world within and beyond our academic disciplines."*

The concept of community of practice is borrowed from Penelope Eckert and Sally McConnell-Ginet, who applied it to sociolinguistics. To put it plainly, the concept helps describe those aggregates of people who come together around mutual engagement in some shared endeavor. By bringing this concept into the interdisciplinarity debate, I mean to suggest that STEM and HASS academics should act as scholars engaged in a joint effort. In other words, scholars from STEM and HASS should strive to work out common ways of pursuing research and sharing assumptions, methodologies and values. What I am proposing here is the creation of an academic community that shares practices and approaches to gain a deeper insight into the world around us. This would be the first step in a collaborative direction.

A successful collaboration in turn greatly depends on the development of effective relationships between STEM and HASS. In this vein, far-reaching and high-impact outcomes can be achieved by holding respect for others and for others' knowledge as the highest value driving the debate. This goal will be more easily achievable by overcoming mere academic discourse and creating solid collaborations between scholars and non-scholars.

In sum, what are the needs for a collaborative dialogue between STEM and HASS?

- Sharing of values, assumptions and methodologies;
- Common ways of pursuing research;
- Strong impact on society as a main goal;
- Creation of real contacts between scholars and "lay" people.

Flowers, insects, and their names. Biocultural diversity for a fertile dialogue between Science and Humanities in the study of languages, cultures and environment. Nadugani, Nilgiris, Tamil Nadu. Photo: Cristina Muru, 2012

In light of these considerations, biocultural diversity seems to represent an excellent starting point from which a collaboration between the STEM and HASS may develop. Indeed, to study biocultural diversity implies:

- Sharing values and beliefs around a concept of a sustainable world and society, and thus around a specific way of pursuing research;
- Having common ways of talking focused on valuing all forms of diversity;
- Working with the objective of producing effective results for both scientific and non-scientific society, and of returning results to those involved in the study;
- Creating a network among people, both academics and non-academics.

For these reasons, I see biocultural diversity as a field where the boundaries between STEM and HASS can be blurred or even neutralized. Indeed, biocultural diversity makes it possible to develop interdisciplinary projects and open up new perspectives.

Further and deeper insights can be gained when approaching biocultural diversity, as the concept generally encompasses the human capital retained by the members of a specific community. But what are these specific communities? And why are they so important? Often of interest to academics and scholars, these specific communities are usually embedded within world societies, and are still living in synergy with the surrounding environment, with which they still maintain a balanced dialogue. This dialogue is usally lost in other societal models, like our Western ones. Nevertheless, by the term "specific communities" I also refer to those groups of people in Western societies who retain specific knowledge about tangible and intangible resources that characterize their surrounding natural world. Here, I mean "resources" to include not only flora and fauna, but also knowledge related to traditions, values, beliefs, and practices

Inquiry into these kinds of "specific communities" can contribute both to the recovery of threatened

knowledge systems and to the implementation of dialogue between scholars and "lay" people. It is worth highlighting that the preservation or revitalization of traditional knowledge does not mean any romantic or nostalgic desire to keep people's conditions or situations unchanged for the curiosity of future generations. Rather, the call for preserving and revitalizing traditional knowledge stems from the recognition of potentials enshrined in specific societies' cultural capital, specifically potentials for the preservation of health, understandings, technologies, and know-how that can be used for improving quality of life.

In this light, the importance of biocultural diversity becomes self-evident and self-explanatory; and the dialogue between STEM and HASS appears indispensable for biocultural diversity preservation and valorization. In turn, the revitalization of traditional knowledge and practices plays a central role in building a successful interdisciplinary dialogue between STEM and HASS. It seems that STEM, HASS, and biocultural diversity cannot avoid being intertwined.

Being part of biocultural diversity, for instance, the study of plants and animals and their contributions to human life seems to naturally imply *Science*. *Culture* is involved too, however, as their discovery, understanding, and uses are part of the knowledge, symbols, values, and beliefs of each human society. And knowledge, symbols, values, and beliefs are transmitted by means of *Language*. As an essential part of any culture, language is the medium for the categorization of people's knowledge and experience.

Taxonomic categorization (the classification of plant and animal species) is a telling example of how biocultural diversity may contribute to making the STEM-HASS dialogue possible. Other cultures' taxonomies, it has been noted, do not always coincide with those of Western science. Wheras Western taxonomies hold categories to be mutually exclusive and taxa to be neutral, universal, and objective, many indigenous taxonomies are not mutually exclusive, and make it possible for taxa to function at multiple levels. Existing first in the speakers' minds, taxonomic groupings are codified within a specific linguistic system, which is turn shaped by the speaker's cultural background.

In this vein, an interdisciplinary approach may help unravel the complexities involved in the concept of biocultural diversity, and allow for a deeper and more complete understanding of such a multifaceted object of analysis. In turn, biocultural diversity can play a pivotal role in moving forward and enhancing the much needed dialogue between the *Sciences* and the *Humanities*, while gaining a more solid foothold in academia.

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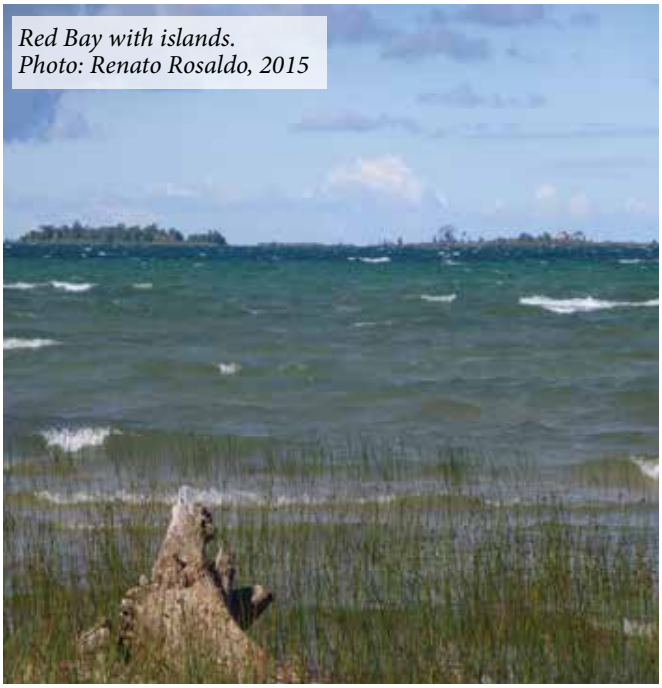
It's Hard to Know

Mary Louise Pratt



Red Bay with islands.
Photo: Renato Rosaldo, 2015

I grew up in small-town Ontario, in the part of Canada made famous by writer Alice Munro. From the time I was five years old in the 1950s, I spent every summer of my childhood, and part of nearly every summer after that, on a little bay on the west side of the Bruce Peninsula, facing out on Lake Huron and protected by a string of islands a couple of miles offshore. I live there now three or four months every year. For as long as I can remember, Red Bay has been a place where I feel deeply at home, a place I think I know very well. The environmental challenge now makes me ask, have sixty years of continuous, though not expert, contact with this geography and ecology given me something to think about, to think with? What do I know about this place to which I've been deeply connected for so long? What environmental unfoldings have I witnessed?

Life on the Peninsula is a continuous negotiation among life forms: humans, plants, animals, insects, birds, amphibians, all the classes of creatures. In the local paper, rural columnists document the week's animal, bird, and plant sightings. Shorelines are dominated by summer cottages. There, with humans mainly absent from October till May, other creatures take over. Mice and squirrels move into drawers, ants build empires in wooden walls, mildew blooms in stored linens, mold forms in damp spots, bats wiggle into rooftops, skunks and raccoons snuggle under floors, birds nest in rafters, where wasps build paper hives, geese nest on shorelines, beavers dam up rivers and flood forests.

When summer people arrive, deals are struck. People prevail by day, and animals at night—skunks, raccoons, foxes, bears, deer, all leave their traces and tracks. Garbage bins are (futilely) bear-proofed, pets leashed, vegetable gardens fenced high. Spiders, their eggs and webs are swept from eaves. The carnivorous insects—mosquitoes, black flies, deer flies, horse flies—welcome humans, who smear themselves with repellents and light smelly fuses around their campfires. The un-hated rodents—

Cabin co-habitant.
Photo: Renato Rosaldo, 2015

squirrels, chipmunks, rabbits—appear by day, and humans enjoy their company. The hated rodents—mice, bats—are driven off or killed when they make themselves visible.

Humans busy themselves rearranging the plant world. They mow grasses, plant and weed gardens, cut back brush and branches, rake leaves, spray poison ivy, fell dead trees, stack firewood. The plants command a great deal of the humans' energies. Several are harvested: morels in spring, other mushrooms in fall; in early summer raspberries, elderberries, blackberries, tiny wild strawberries, swamp leeks; in late summer apples from abandoned orchards.

Hunting and fishing are year-round activities, except for breeding seasons. People shoot rabbits, partridge, deer, and the wild turkeys recently reintroduced. Beaver are trapped for bounties and pelts, minnows and dew worms for fish bait. Children endlessly catch frogs and fireflies, then let them go. The best-loved harvest by far, though, has always been fish. All summer long, people of all ages carry rods, bait,

"For as long as I can remember, Red Bay has been a place where I feel deeply at home."

tackle, gas tanks, gaffes and hand nets out to twelve- to eighteen-foot aluminum boats with outboard engines, returning hours later with stringers of bass and perch. For many, especially men and boys, life has centered on the contest between fish in the water and humans in boats.

Still life with bear repellent. Photo: Renato Rosaldo and Mary Louise Pratt, 2015

Monarch caterpillar eating milkweed. Photo: Renato Rosaldo, 2015

Mary's brother's milkweed patch. Photo: Renato Rosaldo, 2015

Over and over in my lifetime, invading species have complicated this contest, and humans have responded, usually through their institutions. I am struck today by the central role imagination plays in configuring these episodes. Sometime in the late 1950s, the adults around me started talking about fish caught with large, round wounds on their bodies. An alien sea creature, the lamprey eel, had invaded our lakes. The St. Lawrence Seaway, a vast system of locks and canals that enabled oceangoing freighters to move between the Great Lakes and the Atlantic Ocean, had transported this creature to our waters, where it had no natural enemies. A hideous parasite (so we imagined it), it sucked blood and body fluids from other fish, which died or survived in weakened condition. Lake trout, whitefish, all the commercial fish in Lake Huron, were defenseless against it. Their numbers collapsed, taking down with them the fishing families and the shoreline villages those families sustained—Howdenvale, Pike Bay, Stokes Bay, Lion's Head, Tobermory. The lamprey was the first plague I remember. For decades now, I discover, it has been contained by an elaborate program combining poisons, pheromones, barriers, and traps, all continuously needed today to keep this beast in check. The program is held up as a model of "a successful aquatic vertebrate pest control program at an ecosystem scale." The fact that this creature is a beloved delicacy among other peoples is indecipherable from here.

"We must have always known that the most transformative invasive species has been ourselves. Ourselves as humans, and as white people."

In the 1980s, the same ocean ships brought the zebra mussel, originally from the Black and Caspian seas. It took a while for them to make their way up to our peninsula. These tiny, wildly prolific aliens live by filtering nutrients out of water, starving the native food chain. They accumulate toxins, leaving water cleaner, but poisoning the birds that eat them, and fomenting algae. They encrust boats and piers and clog water lines. They suffocate native clams and mussels. Scientists hold them responsible for "the near extinction of many species in the Great Lakes system." Wildlife agencies are still trying out ways to poison them safely.

In the 1990s, large, black, silent water birds appeared and began taking over nesting islands from the seagulls that had always dominated our airscape and soundscape. "Cormorants," I was told. A protected species since 1918, nobody seems to know what drove

Monarch chrysalis cohabits deck. Photo: Renato Rosaldo, 2015

cormorants into the Great Lakes. Here they devour minnows and small fish, and denude islands with their toxic guano. In other places they are considered beautiful. To us, as my neighbor Art puts it, "*they are vermin.*" Lately, the cormorant invasion has waned somewhat as the humans' agencies crudely fight back, tearing up nests and pouring oil on eggs.

"As we ran wild through our childhood summers in the 1950s, we had no idea that twenty miles away, Ojibway children were still being taken from their families and transported to a residential school hundreds of miles north."

Today up here we live in fear of the Asian carp, known to us from pictures as a large jumping fish that has stormed up the Mississippi from New Orleans and now pounds at the doorways of the Great Lakes. We already despise this creature. Unlike many cultures, we consider carp disgusting, with their round, sucking mouths. We call them garbage fish, and throw them back in repulsion if we catch one. We must count on the Americans to keep this creature in check, but have little confidence they will manage to do it.

I have watched many species wax and wane over these six decades. Around the time the cormorants flocked in, Canada geese also arrived on our beaches, proliferating in huge numbers. Their prodigious droppings are a curse on our ("our") beachfronts. Beloved loons disappeared for years, then somehow came back. So did frogs. Last summer, kayaking in the early morning, I saw something so strange I doubted my eyes. There by the shore, scooping up minnows, sat a huge, white swan. Never in sixty years had I seen or heard of a swan on our waters. What shifting habitat had brought it there? As I approached it took off, wide wings whooshing over my head, making for the islands.

These days, three impending extinctions worry us: bats, monarch butterflies, and ash trees. Brown bats, key to controlling mosquito populations, have all but disappeared in five short years, thanks to the white nose fungus first identified in 2006. It looks like they will never come back, an astounding change in our creaturescape. The immense monarch butterfly population has declined to nearly nothing—largely, it appears, due to the disappearance of its lone food plant, the milkweed, along its migration path from Mexico to Canada. People along the route are planting milkweed in hopes of saving the species. Two years ago only three monarchs nested in my brother's patch; last year there were seven; this year there are twelve. Ash trees, one of the most common

species in our forests, have been stricken by the emerald ash borer, identified in 2002. It came from China in wooden shipping crates, and is considered uncontainable. The devastation will be even greater than that wrought by the Dutch Elm disease that wiped out one of our best loved trees in the 1960s and 70s. Ironically, ash trees came into fashion to replace the elms. They are everywhere. Our streets and forests will be cemeteries. In the city of Toronto alone, six hundred thousand doomed trees are already being felled in advance of the plague.

The most talked about eco-site, however, is the lake itself. The eternal waxing and waning of its shorelines obsesses us. In the 1960s and 70s, the lake receded dramatically, rebounded briefly in the 1980s, then fell back again. Miles of lakefront properties nearly lost sight of water; islands became peninsulas; underwater shoals reared into view; it took a five or ten minute walk to get to swimming depth. In 2014 the water came back up a few feet, and in 2015 it has surged back to levels not seen for twenty years. But nobody thinks it will last. It is hard to express the anguish the receding water causes the humans. For most of us, damage to the lake is the worst thing we can imagine. It is the reason most of us are here, it holds us together, provides many livelihoods. We feel certain we are somehow to blame, as humans, but don't know exactly why. Some insist it's a natural cycle, but it's hard to tell whether they believe themselves. Others blame the Americans for taking our water. It's a bad dream.

In some way, we must have always known that the most transformative invasive species has been ourselves. Ourselves as humans, and as white people. Cottage life was always full of objects evoking what white people thought of as their indigenous predecessors—model birch bark canoes, arrowheads found in sand dunes, songs sung around campfires. Tourist stores sold moccasins and toy tomahawks. We rarely saw the Ojibway people who lived on the nearby reservations, even when we went to their beautiful shorelines to picnic. No one spoke about the treaties and betrayals that had made white peoples' farms and cottages possible; about how Ojibway men formed the underpaid workforce for the lumber companies that deforested the peninsula with

For decades, this stuffed bear has helped market Indian curios at the Handicraft House trading post in Mar, Ontario. Reproduction of a postcard believed to be from the 1960s. Photo: Prismaflex Color, Wilson, Ltd. Dryden, Ont. Retrieved from http://sdlotu.com/2014/07/11/handicraft-house-mar-ontario/

axes and crosscut saws less than a century before; about their migration here in the 19th century in flight from Wisconsin. As we ran wild through our childhood summers in the 1950s, we had no idea that twenty miles away, Ojibway children were still being taken from their families, beginning at age four, and transported to a Roman Catholic residential school hundreds of miles north at a place called Spanish River. This had been going on since 1913, and even earlier. Sexual abuse was rife, and students were used in experiments in food deprivation. I had no idea. I don't know who did.

In 2008, Canada set in motion an Indian Residential Schools Truth and Reconciliation Commission, with a five-year mandate to bring this history into the open and address it. In June 2011, its activities reached our Peninsula. A public gathering was held at the reservation. Elders told their stories of this experience, how it had fractured their lives and families, disabled psyches, cost the community its language. I was sixty-two years old, hearing this for the first time. As I listened and wept over the course of that unforgettable day, everything I thought I knew and felt about this place cracked open and fell away. For my whole life at Red Bay, a parallel history of invasion and extinction was being lived around me that I had been protected from knowing. That history was not unconnected to me—it was the condition of possibility of my own deeply sustaining experience of belonging and wellbeing, as a blissfully embedded invasive species.

"As I listened and wept, everything I thought I knew and felt about this place cracked open and fell away. For my whole life at Red Bay, a parallel history of invasion and extinction was being lived around me that I had been protected from knowing."

Today, difficult negotiations are underway between white residents, many of whom love the place like I do, and First Nations people for whom history must be made right. Joseph Boyden's earthshaking novel, *The Orenda* (2013) tells me about the earlier inhabitants, the corn-growing Wendat/Hurons, who in the seventeenth century pacted with the French and were obliterated by disease and by the Haudenosanee/Iroquois, who pacted with the English. How, I wonder, does this all hang together? Will the humans here manage their relations with each other as they try to manage their relations with all the other life forms, old and new, that are doing their thing on the Peninsula? "Management" is not how I want to think of it, however. Aren't we, says the voice of desire, all in this together? Boyden's wise-woman Gosling tells me no, "*Humans are the only ones in this world that need everything within it… But there is nothing in this world that needs us for its survival.*"

Yet all us creatures are living change, without clear direction or plot, an unfolding of life and death whose contours will be as concrete as they are unpredictable. It has been many years since I saw one of the huge, iridescent blue moths that used to land from time to time on a lamp-lit window. I don't know where the hazelnut bushes have gone. Our ash trees are going to die, but perhaps we can fend off the Asian carp for another season. Last year's swan has not come back, but white egrets have suddenly appeared. Black bears and poison ivy are thriving. Many humans have joined to fight off wind turbines that other humans want to build. A man who was given a boat has been pulling up old hardwood logs from the bottom of a bay where there used to be a sawmill. After 80 years underwater, the wood inside is breathtakingly beautiful—perfect, I'm told, for cellos and violins, though he is making a more saleable item, coffee tables.

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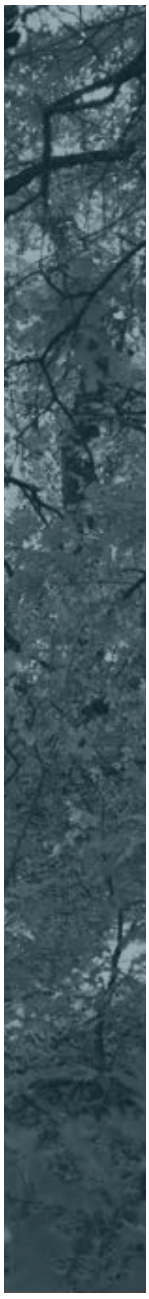
Jeanine M. Canty

Edges of Transformation:

Women Crossing Boundaries Between Ecological & Social Healing

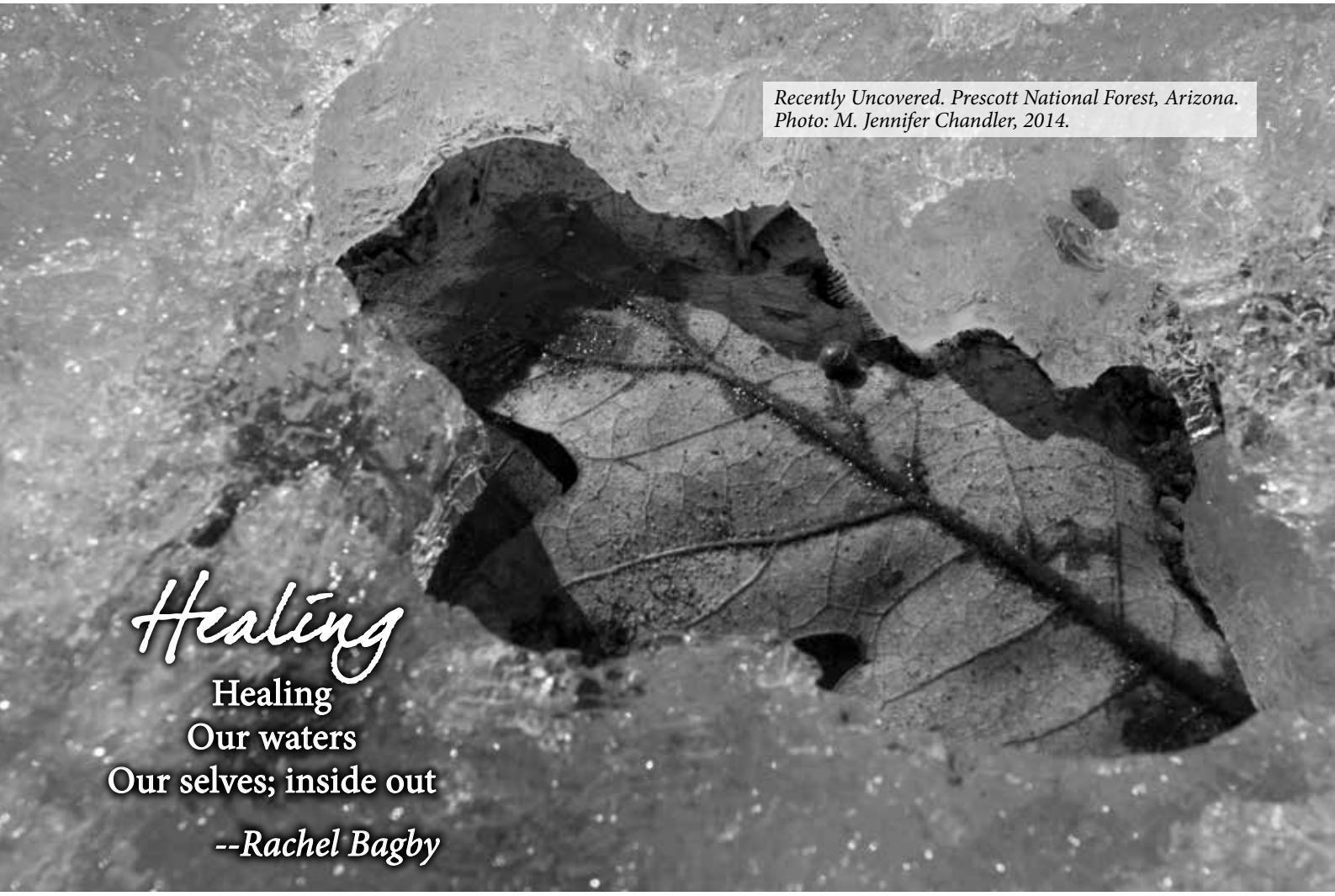


Everything interesting happens at the edges. As we are moving to restore our relationships with nature, including one another, in an extremely diverse and globally connected planet, the knowledge we need is held by those who are crossing boundaries between fixed viewpoints, restoring relationship with place, holding multiple ways of being, and reintegrating feminine wisdom. With a group of boundary-crossing women, I have been working on a book titled *Ecological and Social Healing: Multicultural Women's Voices*. The women are prominent academics, writers, leaders, and embodied practitioners spanning Native American, Indigenous, Asian, African, Latina, Jewish and Multiracial backgrounds—yet all of them are, to some degree, living amidst the mainstream cultural paradigm of the United States. They express a myriad ways in which the relationship between the ecological and the social has brought new understanding to their experiences and work in the world. Moreover, by working with these edges of awareness, they identify new forms of teaching, leading, healing, and making positive change.

Biocultural diversity speaks to the intersections between people and place, to the mutually beneficial relationships that develop when people are at home and living in respect within their local ecological communities. Indigenous peoples have lived in harmony with the natural world for thousands of years and have served as the keepers of the Earth. Their knowledge is pivotal to addressing the ecological crisis and looking at the roles of humans within Earth systems. At the same time, many of our human communities have severed their relationships with nature and are living within a cultural worldview that is destructive to Earth, including humans. We are betwixt worldviews, and the impacts of western culture and corporate globalization have devastated the Earth.

Biocultural diversity needs to be held by all peoples. In particular, people operating under assumptions of western domination and corporate globalization need to reorient to views and practices that are supportive of the larger Earth community. It is time for those who have benefited from hundreds of years of domination of people and nature, and have only recently awoken to these injustices, to follow the leadership of peoples who hold deep understandings of a sacred relationship with nature, the workings of injustice, and what it means to live between multiple identities and worldviews. The latter speaks to those who have broken histories and are learning how to take these lessons in order to bring healing and reconnection with people and place.

The term, *edges of transformation*, has many lenses. Permaculture often claims that everything interesting happens at the edges between ecosystems. Transformative learning acknowledges that our worldviews change from having experiences that confront our identities and force us to make meaning. Edges also represent crossings into liminal spaces—stepping into the mystery of nature, spirit, and



Recently Uncovered. Prescott National Forest, Arizona. Photo: M. Jennifer Chandler, 2014.

our psyches, not knowing what one may encounter. Edges are often hard, whether in sensory sharpness or through the psychological fear of transitioning into a different reality. Nor are edges seamless transitions—they do not embody the conventional sense of wholeness; edges are often formed when something breaks, such as a rock formation or a held sense of personal identity.

Within western psychology and more "modern" healing paradigms there is an overemphasis on becoming whole. Both the individual and the collective are encouraged to have a clear identity comprised of a linear, concise storyline. Being whole is associated with being at the center, being intact, unbroken—having a fixed reality and clear boundaries of what is me and not me. It encourages a single identity that is untainted, wholesome.

However, our storylines are often comprised of disparate experiences—most peoples who are emerging from the devastations of hundreds of years of colonization and globalization hold shattered histories. These stories include ancestral trauma, forced separation from one's homeland and traditions, oppression, and acculturation. Within the United States and other nations of the global north, the acculturated individual is often heralded as the archetype of wholeness. But this is a homogenized

"The knowledge we need is held by those who are crossing boundaries between fixed viewpoints."

identity that is unrelated to cultural tradition or to a particular landscape. It is an identity of separateness and sterilization. This is the same archetype that was used historically to unite diverse groups of Europeans in order to exploit indigenous peoples and peoples of color and at the same acquire natural resources.

It is unreasonable to assume we will re-enter a collective state of healing that is based on a common, seamless view. Instead, wholeness and healing

manifest when we honor our collective wounding and allow our brokenness and resulting stories and diversities to be seen and held. It is our cracks, our brokenness, our edges that reorder our vision of the world, so that we may see more clearly, from a perspective that is much larger than a myopic view.

Relating this to biocultural diversity, no healthy ecosystem is homogenized and no healthy culture is colonized. Monocultures of any type are weak and shallow systems. A healthy ecosystem is abundant with ecological diversity—a myriad edges joining infinite, diverse life. An ecotone describes an overlapping zone that joins two ecological communities, such as meadow and forest. Ecotones have elements of each community and, in fact, are home to beings that are not found in either. One may say they yield an emergent property that is the fruit of crossing boundaries, straddling edges.

We currently have generations of peoples who straddle multiple edges—varied identities that consist of unique combinations of the indigenous and multicultural, the colonized and colonizer, the displaced and the reclaimer. We represent the joining of multiple communities, histories, and identities. Indigeneity is a process of restoring the human connection to culture and land. It is about being at home within our ecosystems and living a respectful, sustainable relationship with the more than human world in the places we inhabit. Indigenous cultures have enacted this relationship throughout human history. If we are to, collectively, transition to sustainable relationships, all peoples must become indigenous to place. Learning about local ecosystems, learning from the peoples native to place, and drastically changing our patterns of consumption and worldviews are all a part of this. Yet the places we live within are populated with broken histories of the land and peoples, and many of us are embedded within these stories of brokenness. It is not enough to return to what was indigenous in the past, we must honor our stories of brokenness, reweave our various and disparate experiences to our present relationships with place, including one another.

By holding an identity that crosses multiple cultures, histories and communities, one develops the ability to embody larger perspectives, as one is not situated in a single worldview. Living in deep relationship with a landscape teaches us to identify with the beings around us. Living within multiple cultural identities teaches us to relate to many points of view. This ability to both understand and empathize with a larger, varied whole creates greater potential for healing that is inclusive. That is especially true when these identities are embedded within our collective painful histories.

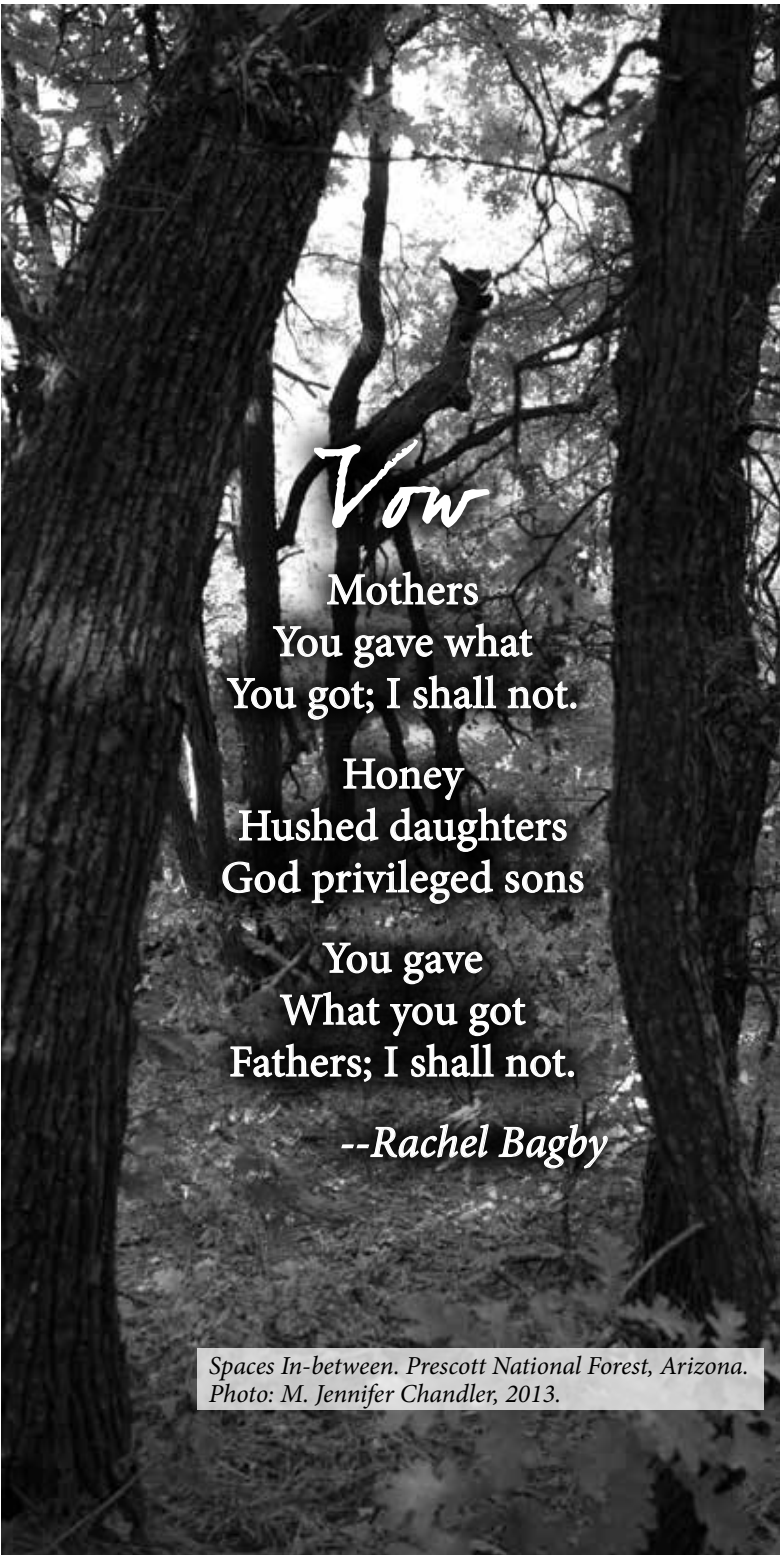
The indigenous, peoples of color, and women are disproportionately affected, both historically and in the present, by the ecological crisis. The oppression of these groups and the oppression of nature have gone hand in hand. While "marginalization" typically holds a negative connotation, from a broader perspective marginalized peoples often hold greater power, through experiences that cause them to question the mainstream. If we accept that our current ecological and social crisis is caused, to a large extent, by the problematic western paradigm and its damaging enactment, having an off-centered worldview is extremely powerful in transforming the dominant paradigm. This seems particularly true when one holds an identity that comes from multiple intersections of race, culture, gender, class, and other distinctions that do not permit one to sit solidly within a single grouping. By being off-center, a person who has many experiences of identity that do not fit within the majority possesses the power to hold multiple, often conflicting lenses.

"Indigeneity is a process of restoring the human connection to culture and land. All peoples must become indigenous to place."

The process of healing the human relationship with the rest of the natural world is a process of reclamation and restoration. Many of us are reclaiming our earth-based ancestries and restorying our connections with all of life in our present communities, whether rural or urban, within our native lands or within our displaced homelands. The wisdom needed for this rests within paradigms that embrace indigenous and feminine wisdom. Women hold a prominent role within this work. The Earth is often beheld as feminine, as she is the giver of life, an embodiment of deep receptivity and support. The living world is in constant relationship and continually adapting

to change. Listening, observing, and responding to others lead to strong, harmonious, life-affirming relationships. As holders of feminine wisdom coupled with experiences of marginalization under hundreds of years of patriarchy, women are emerging as leaders in the transition to a resilient society.

Even further, as we witness and tell the stories of our individual and collective brokenness and enter into healing actions and new visions, this movement may encourage others to embrace their own stories of brokenness. No one holds a single story, and most have diverse lineages and experiences with displacement from their traditional cultures and homelands—even those who appear to benefit most from structural oppression and corporate globalization. In allowing our multiplicity, we move away from binaries and single-pointed views, creating the conditions for many forms and narratives that can support one another. Nature is abundant because of cooperative biodiversity. Edges create fertile ground.



Spaces In-between. Prescott National Forest, Arizona. Photo: M. Jennifer Chandler, 2013.

Our book is rooted in these ideas and speaks to an "edge awareness or consciousness"—in essence, to the power of integrating multiple and often conflicting views and the transformations that result. As women transiting the edges between the ecological and social, we have powerful experiences that are creating new forms of healing. The narratives provided by our group of women cross the boundaries of place, history, trauma, worldview, restorying, compassion, and healing. Our aim is to break the patterns that keep us separate from our ecological homes and from one another, and moreover to create power in a collective revisioning of our future.

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Cracked EARTH:

INDIGENOUS RESPONSES to Nepal's Earthquakes

Sara Shneiderman & Mark Turin

"*My heart is still shaking*", said Ram Bahadur when we spoke with him the day after the first massive earthquake—7.9 on the Richter Scale—struck Nepal on April 25, 2015. Almost five months later, he and other members of the Indigenous Thangmi community in Nepal are still coming to terms with their new and permanently altered reality following this brutal upheaval.

A second earthquake (technically only an aftershock—although it clocked in at 7.3—as it fell along the same fault line) struck Nepal on May 12. It was epicentered in the districts of western Dolakha and eastern Sindhupalchok, the heartland of the traditional and ancestral territories of the Thangmi community. It caused massive devastation: nearly every house in every village was leveled, as were the district headquarters. As Bir Bahadur, a Thangmi intellectual and language activist put it, "*Our houses are no longer useful things*." The same could be said for community buildings, schools, hospitals, temples and grain stores.

The loss to lives and livelihoods brought about by the earthquakes that ravaged Nepal in April and May 2015 has been immense, but the full impact—what we may refer to as the political, social, economic and emotional aftershocks—is only now beginning to be understood. Here we ask: how has the Thangmi community, one of Nepal's Indigenous and historically marginalized groups, been affected and impacted by this natural disaster? How have the Thangmi responded and begun to rebuild their lives? How has the earthquake challenged traditional understandings of land, territory, family and the environment?

A traditional mud, stone, and wood house destroyed by the earthquakes, along the main road between Charikot and Dolakha. Photo: Mark Turin, May 2015

The first reports from the Thangmi homeland—where we have lived and worked in partnership with the community for almost 20 years—were sporadic. Many of the higher-altitude northern villages, which lie just south of the Tibetan border, were entirely cut off following the disaster. As is so often the case, the international media took notice of the region only after a US military helicopter carrying Nepali and US troops on a relief mission tragically crashed into the side of Kalinchok, a mountain sacred to many local communities, killing all military personnel on board as well as several Nepali civilians who were being evacuated.

Photos of the general destruction shared via social media showed that traditional architecture—constructions in wood, brick and mud—lay in ruins, while the concrete landscape in the district capital looked to have stood up surprisingly well. Yet, cracked concrete cannot be easily repaired and would have to be torn down, as rips and tears in the material render it unstable. Older buildings, while collapsing more visibly and sometimes quite catastrophically, had been constructed out of more traditional materials that could be salvaged and reused: beams, window frames, doors and grills. Even unbroken bricks could be recovered from the debris.

"How has the earthquake challenged traditional understandings of land, territory, family and the environment?"

Following the earthquakes, in the rush to build temporary shelters, demand for galvanized corrugated tin roofs exceeded supply. The product was cheap, light and reusable, and if it fell on your head, you might get a cut but would not be seriously hurt. No one was buying bricks from the shuttered kilns and brick farms that encircle Kathmandu. Their smoke stacks were broken and silent, many had collapsed entirely, and their staff—predominantly rural workers, including many Thangmi community members—were heading back to their families in rural districts, their earnings in hand.

The first images that came out of Dolakha were heart-wrenching: some houses had simply snapped in two, others had slid down a ridge, folded in on themselves, or been relieved of their façade as it sheered off. *"If only the second earthquake had brought our house down completely!,"* Bir Bahadur lamented. "*We've had to spend so many hours doing demolition, it's such a waste of time.*" He spoke of praying for a third earthquake, so that he and his community would be spared the emotionally and

A bare lightbulb affixed to a tree next to a temporary shelter. A more aspirational than functional statement, as power had not returned after the earthquake. Dolakha, Nepal. Photo: Mark Turin, May 2015

physically draining work of leveling the houses that they had built with their own hands. Komintal, a Thangmi community member who lives in Kathmandu, where he manages the Digital Himalaya Project, let out a big sigh: "*The earth has played Candy Crush with us!*"—referring to a popular game for cell phones.

Thangmi community members in the village of Suspa were exhausted by the uncertainty and fear of not knowing whether the earthquakes were now finally over. Living in an earthquake zone entails managing a stress that is hard to imagine: could you start to rebuild your life, or was another quake coming just around the corner? Indeed, by the end of September Nepal's National Seismological Centre had registered almost 400 aftershocks over 4.0 on the Richter Scale, many of which were epicentered in Dolakha.

By the time one of us (Mark) visited in May, our hosts in Suspa—Kedar and his father Mangal—had filleted their old house, removing not only tin roofing but reusing each nail that could be salvaged. They had relocated a steep 10-minute climb up the hill, in the middle of a small terrace planted with turmeric. They would have to pay their relative back for the cost of the crops that their shelter had trampled. Mangal, an expert carpenter, had worked night and day to ensure that their extended family had a

reliable water supply and weather-resistant if temporary housing. He had rigged up a lightbulb on a post outside the shelter to keep away the jackals that threatened to eat their chickens at night. There had been no electricity for weeks, so the electricity pole with the bare bulb attached to it was more aspirational than functional—but he was prepared for when the grid would be repaired and turned back on.

The women in the household had been relentless in their salvaging and foraging for food to keep the family fed. Much of their grain stock had been lost, contaminated with mud or debris, and what had survived was quickly soaked beyond use in the heavy rains that followed the first quake. Everyone's creativity was being pushed to the limits, making do with less, prioritizing the children and the old, and falling back on traditional staples from the forest (such as ferns and wild yams), using ashes from the fire to scrub pots clean and tender branches of *neem* (*Azadirachta indica*) as a toothbrush, known to have strong Ayurvedic properties.

"*We were lucky that there was no power that Saturday so the kids were outside playing in the sun. If we'd had electricity on the day of the quake it would have been a lot worse, as the kids love to watch cartoons and DVDs on weekends when they're not in school. They would have been crushed as everything came down on top of them,*" continued Bir Bahadur, who had kept careful notes of all that had transpired since the earthquake. Shaking his head, he explained how the first relief supplies that arrived included unhusked rice that they couldn't eat, as all of the three technologies they had at their disposal to husk the rice (diesel mill, water mill, and hand mills) were broken and beyond repair. Bir Bahadur was tending his buffalo when the quake started, and looked down the valley to see a rising wall of dust. "*It was just as if someone had blown on the embers of a fire that raised a cloud of smoke across the whole village.*" While the ground shook and wood started falling off his house, he ran inside to rescue his laptop and his phone charger. Then he watched his home collapse in on itself.

Bir Bahadur's younger brother, Nare, had been demolishing, rebuilding, and re-rebuilding every day since the first earthquake. As he and his family salvaged more from the rubble of their home, they had to extend the size of their temporary shelter to accommodate their rescued belongings. He hadn't had a day off for over a month, and his hands were raw. He spoke of his disbelief at what had survived in his house: while his two goats had been crushed, the 13 freshly laid eggs that lay in a bowl in the kitchen were miraculously unbroken. His family had eaten one a day since the quake.

Wheat drying on the remains of houses, all of which will have to be threshed by hand before the monsoon rains come. Dolakha, Nepal. Photo: Mark Turin, May 2015

Nare spoke of people who were not too happy with the way that the army had "helped". Army platoons had come to the village to assist, but they worked so roughly—dragging belongings out of houses so that bags of grain became mixed with mud rendering everything useless, or breaking cabinets and boxes that were not damaged in order to rescue documents—that people wished that they would return to their barracks.

The children of Suspa village had watched everything that they knew crumble around them. Their school, their community centre and their homes were all gone. All public and communal spaces where they could meet, play and study had been destroyed in the successive waves of earthquakes.

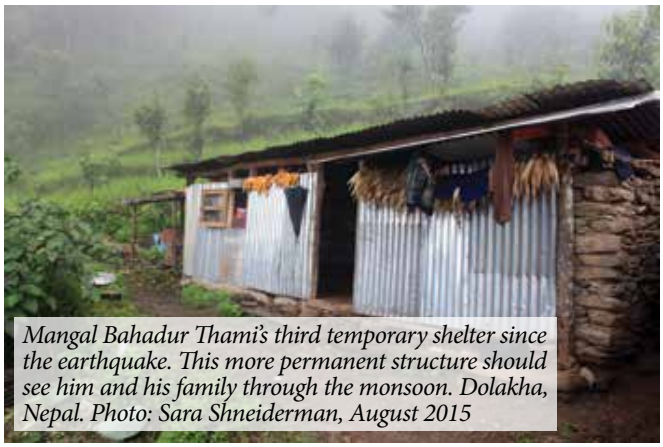
Bir Bahadur's niece Pikin had been at home resting when the first quake hit, as she hadn't been feeling very well. She had the presence of mind to cut the ropes to free the goats on the ground floor of her house before escaping through the roof as it collapsed around her. Her mouth quivered as she explained how it took her over a week to be able to sleep. Her elder cousin Anjali was at the hearth inside as her home crumbled. Remembering what she had been taught in school, she dove under a bed, but the bed frame was weak and collapsed on top of her, pinning her to the ground. Her brother Sagar freed her by digging her out with his bare hands. Their father

"The earthquake may alter broader social patterns of kinship and residence in lasting ways."

Ram shook his head as he told the story: "*That advice about taking refuge under beds and in doorframes may be suitable in a city made of concrete, but it's of no use here in this village of stone houses.*"

We asked Kedar when and where he hoped to rebuild. He replied calmly: "*We'll wait until after the monsoon to decide where to build. If the monsoon landslides wash us away, then we won't need a house anyway, and we'll build a* chautara *instead.*" A *chautara* is a roadside resting place, built as a memorial to those who have passed away.

Kedar, like many other young men and women, had taken the opportunity the quake offered to set up a new home with his nuclear family, separating from the joint family set-up in which he, his wife, and two young sons had previously lived. The terraced field in which they built their tin shelter was simply too narrow to accommodate a full-size home suitable for the joint family; so instead parents and son built separate, smaller shelters. Kedar was not unhappy



Mangal Bahadur Thami's third temporary shelter since the earthquake. This more permanent structure should see him and his family through the monsoon. Dolakha, Nepal. Photo: Sara Shneiderman, August 2015

The local Bhume shrine in Suspa, still standing but structurally compromised following the earthquakes. Dolakha. Photo: Mark Turin, Nepal, May 2015

with this outcome, suggesting that he and his family might choose to continue living apart when they would rebuild permanently.

This is just one of the many ways in which the earthquake may alter broader social patterns of kinship and residence in lasting ways. Another important dynamic to watch will be how the earthquake affects people's religious and ritual practices. For members of the Thangmi community, *Bhume* is the key territorial deity, embodied in rocks and other natural features that are embedded in the landscape. While Bhume shrines were traditionally open to the elements, several Bhume "temples" had been constructed across the region over the last decade, all of which were destroyed or damaged in the earthquakes.

Although community members were relieved, even proud, that Bhume—embodied in local rock and stone—was unharmed, in many cases they were unable to remove the sacred stone from the collapsed temple to worship it elsewhere. Were these earthquakes to be read as a manifestation of Bhume's anger? No, Thangmi friends assured us: theirs is not a wrathful deity. Yet they would need Bhume's help in the coming months—and lots of it. As the embodiment of environmental forces, Bhume would determine how plentiful key resources for rebuilding—wood and water—would be in the coming months.

A meeting of the officers of Faselung Samajik Sewa (FSS) an Indigenous-run and local non-profit social welfare organization, to discuss the community response and priorities for reconstruction. Dolakha, Nepal. Photo: Sara Shneiderman, August 2015

The community was waiting. They would be watching the heavy rains of the monsoon that typically would last into October to see whether the local landscape and topography would be reshaped once again after landslides and floods. As individuals, families, households, and as a community, they were making careful decisions, informed by detailed local and traditional environmental knowledge, to wait out the rains and decide where to rebuild their lives only once the skies have dried.

Locally based organizations supporting Thangmi communities and their neighbors to rebuild:

CORE International (a registered Canadian charity): http://www.core-international.org/

Educate the Children Nepal (a registered US non-profit): http://www.etc-nepal.org/

Nepali Heritage Charity Foundation (a registered Canadian charity): http://www.nhcfbc.org/

Trans-Himalayan Aid Society: http://tras.ca

Additional photos complementing this article are available as a member-only feature on the Langscape website. Please visit www.terralinguaubuntu.org *and become a member.*

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When Home Becomes A PROTECTED AREA:

THE UDEGE PEOPLE AND THE BIKIN RIVER VALLEY in the Russian Far East

Aleksandra Bocharnikova

The Sikhote-Alin is a mountain range in Russia's Pacific Far East. This territory contains one of the largest unmodified temperate forests in the Northern hemisphere. The United Nations Educational, Scientific and Cultural Organization (UNESCO) states that its protected areas are "considered to contain the greatest plant and animal diversity on the north-western coastline of the Pacific".

One of the largest rivers that flow through the Russian Far East is the Bikin. The territory of the Bikin River basin is sometimes referred to as the "Russian Amazon". This region is well known, not only for its unique nature, but also for its indigenous peoples, including the Udege and Nanai, who live in the Central Sikhote-Alin range. The cultural center of the Udege and Nanai is the indigenous village of Krasny Yar. Many traditional festivals are carried out in Krasny Yar. Other indigenous villages located in the same district are Olon, Yasenevo, and Sobolinoe.

Udege and Nanai peoples have been pursuing their traditional ways of life in the region for many centuries. They are hunters who also go fishing and gathering. Udege people considered that a tiger and a bear were their ancestors, and maintain a close relationship with the Bikin River. There are many legends about the history of the Udege people, the tiger, and the bear. One of the best-known stories has it that all Udege originated from the bear and that the tiger is their distant

The valley of the Bikin River, not far from Krasny Yar. Photo: Aleksandra Bocharnikova, 2011

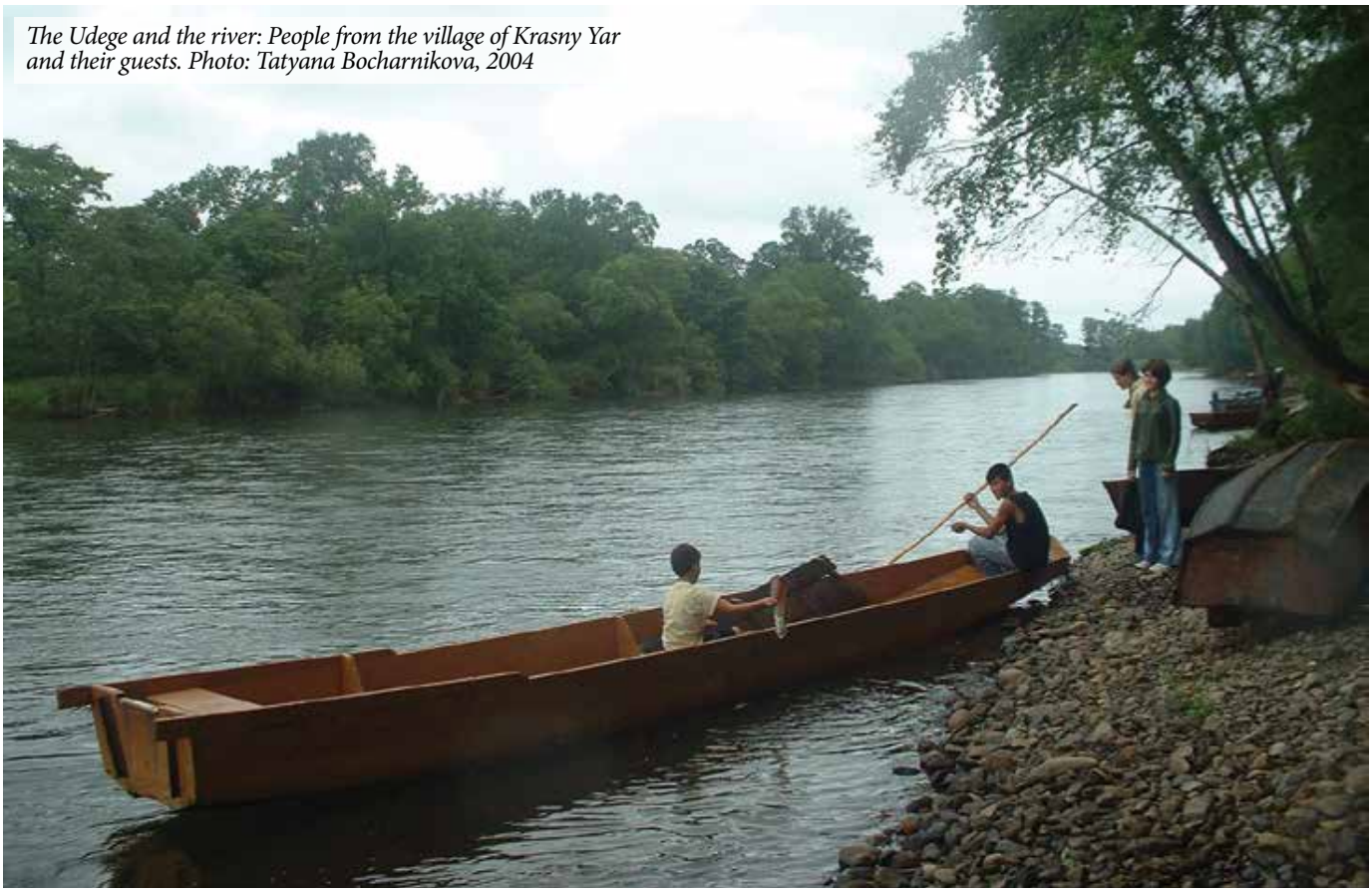
An owl in the Bikin River valley. Photo: Alexei Kudryavtcev, 2014

relative. There were two orphans, a girl and a boy. The girl was adopted by the bear, while the boy was adopted by the tiger. The girl married the wolf, and their children became the ancestors of Udege people. The boy married the she-tiger, but they did not have any children.

In this part of Russia there are no oil and gas resources. However, forests not only have cultural value for local people, but also have become an object of industrial interest as a source of wood for both industrial companies and government. Logging in this territory has a long history. Industrial logging first took place in the river basin during the 1960s. A road to Krasny Yar was built, and a separate village for workers in the timber industry was erected. The traditional way of life of the indigenous inhabitants became a source of conflict with people who wanted to cut and sell wood from the taiga forest. Not only members of the indigenous communities, but also people from neighboring settlements, as well as scientists working in academic institutions and non-governmental organizations—such as WWF Russia and the Russian Association of Indigenous Peoples of the Far East and North of Russia (RAIPON)—were involved in this struggle.

In May 2001, the government adopted the special law "On Territories of Traditional Nature Use of the Indigenous Small-Numbered Peoples of the Russian Federation", regulating the rights of indigenous peoples. Indigenous organizations played a very active role in lobbying legislature to adopt the special law, as well as the laws "Guarantees of the Rights of indigenous small-numbered peoples of the Russian Federation" and "On basic principles of the organization of community of indigenous small-numbered peoples of the Russian Federation", which since then have been pillars of Russia's legislative framework on indigenous rights. At the time

The Udege and the river: People from the village of Krasny Yar and their guests. Photo: Tatyana Bocharnikova, 2004



The indigenous village of Krasny Yar. Photo: Aleksandra Bocharnikova, 2011

of its adoption, the special law was seen as a landmark success. According to this law, indigenous peoples were allowed to create their own protected areas. However, in practice they were not able to do so, not only in the Far East, but also in others parts of Russia.

> "Forests not only have cultural value for local people, but also have become an object of industrial interest."

Local inhabitants drafted an appeal to the Russian government to protect nature from commercial logging. Indigenous peoples, government organizations, and ecological movements decided to prepare the documents for the creation of a protected territory. This territory was intended to become a model region, but the Federal Government did not approve the proposal. The main obstacle to the formal adoption of the proposal was the failure of the governor of Primorsky Kray (Primorsky province) to endorse it.

Timber harvesting is an important source of revenue for the regional government, while the establishment of a protected area would impose strong limitations on industrial exploitation. According to the proposed management plan attached to the nomination documents, the territory of traditional nature use would be divided into several zones. The Regional Administration prohibited commercial logging on the land of the proposed reserve. The timber companies appealed this decision, demanding a reduction of the protected area and the transfer of

House in Krasny Yar. Photo: Aleksandra Bocharnikova, 2011

The new cultural center in Krasny Yar. Photo: Aleksandra Bocharnikova, 2011

part of it to their concession area. Indigenous peoples and environmentalists opposed the move, and the administration eventually rejected the appeal.

In 2007, however, the local administration gave logging companies permits to carry out what it referred to as "sanitary logging", which in practice would amount to full-scale forest harvesting. The most problematic change was that indigenous peoples were now prohibited from hunting and fishing in the territory where they have traditionally done so, without first obtaining a special permit from the authorities in the far-away city. The court eventually ruled in their favor and repealed this regulation.

The revised charter contained another provision that infringed on the interests of indigenous peoples. The use of mechanical transport devices in the territory of the reserve was prohibited. However, there are no roads in the reserve, and the only way for people to go to and from their hunting areas is by motorboat in the summer and by snowmobile in the winter. This prohibition thus made it impossible for indigenous peoples to maintain their traditional ways of life on the land. The territory of the reserve is very large and located 200 km away from the village. Furthermore, the indigenous inhabitants of the Udege and Nanai village of Okhotnichiy, situated in the territory of the reserve, were now barred from moving back and forth from and to their own village. Since the village has no functioning public services, this move effectively cut the villagers off from access to health care, food and any public services. When the indigenous peoples appealed the regulation in court, the judges demonstrated their utter lack of familiarity with the Udege way of life. "*The court was absurd*," said Aleksei Kudryavtcev, a local resident. The judges stated that Udege should travel by horse and reindeer, as their ancestors did, not by motorboat. The judges were obviously unaware that Udege have never engaged in reindeer husbandry. This case became a violation of the rights of indigenous peoples to adequate food, culture, and subsistence.

In May 2011, one timber company signed a contract, leasing two lots within the territory that included a valued pine nut harvesting zone. This company exported wood to foreign countries. Local people held a meeting to organize a struggle against this development. In June, several hundred people joined a rally against the company in the neighboring village. The participants demanded that Russia's forestry legislation be amended to prevent commercial logging in the forest reserve and to protect valuable pine nut harvesting zones. All in all, these developments were regarded as a major success, and a headline in the local newspaper read: "*The Bikin forests have been successfully defended and their future safeguarded*".

Festival at Krasny Yar: Performance of the village's dance group. Photo: Alexei Kudryavtcev, 2007

The Udege hunter and the boat: Ivan from Krasny Yar going fishing. Photo: Aleksandra Bocharnikova, 2011

A fine catch of fish. Photo: Alexei Kudryavtcev, 2006

Dramatic developments in this situation have occurred over the last two years. In 2014, circumstances in the village of Krasny Yar became complex, because local people separated into two camps: one insisted on the establishment of a "Territory of Traditional Nature Use" (TTNU), a special type of protected area meant to support indigenous peoples and their traditional activities, while the other camp agreed with the establishment of the National Park. The Federal Government explained that it is impossible to create a federal TTNU because of problems with the Land Code. The only way to reconcile these diverging points of views was to make changes in Russian legislation, especially in the sphere of protected areas. The existing protected area system in Russia is mostly meant for the preservation of nature, not for the protection of indigenous peoples. For example, the Udege Legend National Park in the neighboring Krasnoarmeysky Rayon (a district in Primorsky Kray) was established for the purpose of saving the Amur tiger and other species, and nature use is prohibited in the Park's territory. Although the Park was named "Udege Legend", the rights of indigenous peoples were violated because they didn't have access to their hunting grounds and they had to establish their right to the satisfaction of the courts of justice.

Action by NGOs, local people, and scientists resulted in changes to the Law on Protected Areas of the Russian Federation. In the new version of the Law, the goal of the establishment of National Parks is protection, not only of nature, but also of indigenous communities living in the territory. In April 2015, President Vladimir Putin signed off on a List of Orders to complete the establishment of Bikin National Park. The Bikin Working Group prepared the documents, with feasibility assessment materials provided by WWF Russia, the Pacific Institute of Geography, the Institute of History, Archaeology and Ethnography of the Peoples of the Far East, and representatives of indigenous peoples. The President ordered that the Russian Government should amend legislation in order to allow indigenous peoples to carry out their traditional way of life in the Park. A Decree establishing the National Park was adopted by the Russian Government on August, 1, 2015, and the Federal Ministry of Natural Resources and Environment adopted Regulations and a Charter that envisions mechanisms for the indigenous peoples in the region to participate in the Park's management. The establishment of Bikin National Park can be seen as a victory for indigenous peoples because this area is the first National Park in all of Russia where their interests are ensured.

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Biocultural Diversity CONSERVATION TOURISM:

THE GAMARAN PROTECTED FOREST, West Sumatra, Indonesia

Tom Corcoran

Ramly tells Minang stories by the firelight in the Gamaran Forest. The art of storytelling is still very much alive in Minang culture. Photo: J.J. Kohler, 2015.

To Walk in the Gamaran Protected Forest

Given the myriad of contradictions, spending time in the ancient forests of West Sumatra with Minangkabau people (Minang) is perhaps a challenge for the mind and spirit of any conservationist. Traditionally a people of the forest, the Minang are the world's largest matrilineal society, with land owned and passed down through the female lineage. They possess a culture centered on protection of the most vulnerable, hold a deep belief in the ancestral spirits, and are historically connected to nature. Yet they could easily be accused of showing little concern for the forest, rapidly depleting its wealth as well as its spiritual and environmental protection day by day.

Walking in the forest with Ramly and Amek, my Minang team, is often akin to walking through a great library hall with gifted orators, exploring history, language, art, and nature as we sample wild foods, follow animal tracks, collect medicinal plants and discuss the sweet and sour flavors of the forest. By the light of the night fire, the stories come to life, some myth and some no doubt fact, the close encounters with the *Harimau* (tiger), the Sun bear, or the *Orang Pendek*, the cryptozoological "little people" of the West Sumatran forest.

Each time we set out to the forest, it seems the edge has retreated a little further, while inside the forest the canopy is slowly being lowered. Every few hours we come to a clearing, often littered with fresh-cut planks or the stumps of once towering trees and the decaying evidence of an old logging camp. Ramly and Amek navigate the forest moving from one of their past logging sites to another. They recall vividly their experience with every tree they have cut and every animal they have trapped. They have a local name and use for almost every plant, animal and sometimes insect.

As we pass between the towering trees, the conversation is focused on life up to 200 feet above. Ramly points out trees with significant or abundant life supported in the canopy, insisting that trees housing such dense epiphytic life are too valuable to sacrifice, regardless of the timber's value. His dilemma then follows in the next breath, as he feels that many loggers drifting in from outside the local villages do not pay any attention to traditional law, forcing him and other locals to fell these giant hardwoods before they do.

The two have spent much of their life in the forest felling trees, hunting and fishing. Their initiation into life as loggers was, as with all young boys from their villages, riding the fresh-cut logs down the cascading rapids one by one and then hiking back into the forest for more. They are lean and fit, but it is dangerous work—limbs are broken and lives often lost. But the boys learn to map the forest and the rivers, mimicking every bird and animal sound they hear as they glide effortlessly along the muddy tracks with the ease of an ice skater.

Like all Minang forest workers, Ramly and Amek talk of the belief system or *Adat*, which is part of everyday life. These laws allow them to work in the forest safely and protected. They tell me that if they were ever lost or injured, they could tap on the giant Fig tree three times and the *Harimau* (tiger) would come to lead them to their village. Many of the traditional laws of the Minang are developed to conserve the integrity of the forest, and ensure a constant renewal of forest resources, although it is clear today that not everyone follows traditional law. The men know the forest has its limits and they question the ability of their laws to protect it much longer.

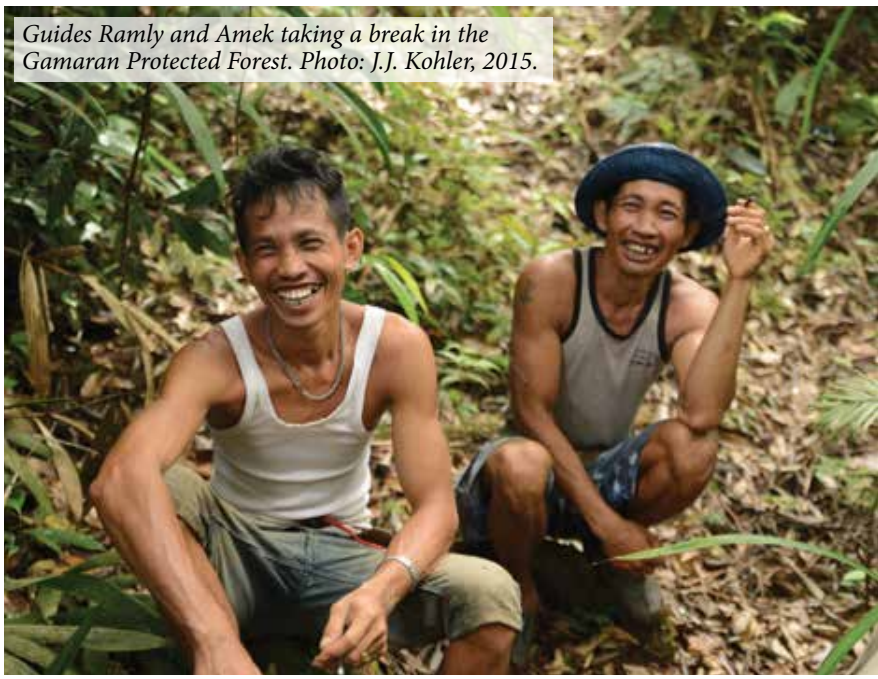
Ramly and Amek loved working with my team as guides. I knew this was more than a job to them. It was a chance to use their skills and knowledge of the forest and get paid without the hard and dangerous side of logging. The benefits are reciprocal, as I came to discover that the two hardened forest men also brought great credibility to my team and thus trust among other forest workers. During one walk, Ramly talked of the tourism project in Nyarai. He said how other loggers were leaving the forest and making money just to walk along an easy trail. Both Ramly and Amek regularly asked how they could bring tourism to their village and work permanently as guides.

Tourism Comes to the Gamaran Protected Forest

Tourism is a new addition to the lives and livelihood strategies of at least one community living on the border of the Gamaran Protected Forest. It started around two years ago, when some of the young men of the Nyarai village decided to set up a small tourism adventure business. Yanda, who has worked with me as a research guide on several occasions, was one of the young entrepreneurs who gave up life as a logger to become an outdoor tourism guide. With some skepticism from the community leaders, the men aimed to bring tourism dollars to their little area of the forest and attempt to stop some of the degradation. Yanda and his friends started charging a fee to groups of visitors to be guided through the forest along a two-hour trail to the magical waterfalls of Air Terjun. The falls were once a private retreat and fishing spot for villagers. They are visually spectacular, beautifully fresh and filled with crystal clear

A clearing in the forest with fresh-cut wood ready to send downriver. Usually the logs are cut into manageable slabs, as seen here. Photo: J.J. Kohler, 2015.

Ramly gazes high into the canopy. His skills and traditional knowledge of the Gamaran Forest are possibly unmatched. Photo: J.J. Kohler, 2015.



Guides Ramly and Amek taking a break in the Gamaran Protected Forest. Photo: J.J. Kohler, 2015.

water for swimming among the abundant aquatic life. The falls are situated on the edge of the upper forest, just in far enough to alert all your senses to the deeper jungle, but not enough to hinder the abundant wildlife just beyond the falls as the forest rises to what is referred to on maps as the strict conservation zone.

When tourism began in Nyarai, it was purely a weekend affair for some of the community. The main visitors were young people from the city of Padang, which is around an hour away by car. The young guides were making a little money and enjoying their weekends walking the forest along the narrow trail, swimming with their guests and having fun. Some had stopped logging and depended solely on tourists. They spread the news to older men of the money to be made if they traded logging for tourism. As the numbers of visitors steadily increased, so too more of the loggers turned their hand to guiding. Ramly and Amek remained in the forest cutting wood, fishing, and hunting as always, but continued to talk of working in tourism. They recall several months where the sound of a chainsaw other than theirs was seldom heard and the area exploded in a buzz of tourism fever. Amek now told stories of the tourists who filmed and photographed him as he rode his fresh-cut logs down the rapids past the bewildered hordes.

The reverberating sounds of chainsaws throughout the forest were swiftly replaced by the echoes of people, as throngs of visitors were now careening along the narrow trails, bringing the bustle of the city to a once peaceful refuge. Yanda recalled thinking that the scales had now tipped, and perhaps the tourism was going to be worse than the logging. Television crews, newspapers, and radio networks all gave attention to the Nyarai-guided walk to Air Terjun. So much so that

"The reverberating sounds of chainsaws throughout the forest were swiftly replaced by the echoes of people."

up to 1000 people each month made the short trek along a single forest trail to plunge into a regularly crowded water hole. Small *warungs* (shops) sprung up along the trail, as well as on the rocks at the waterfall. The young instigators of the tourism project were struggling to control what they had so eagerly begun. An over-crowded village car park and the discarded litter from the visitors were becoming a burden to the village and visible all along the trail. The trail itself was fast becoming overused and widening by the week.

Nyarai waterfall (Air Terjun), the first attraction in the Gamaran Protected Forest. Photo: J.J. Kohler, 2015.

Yanda and Tom meeting with some of the community elders in Nyarai. Photo: J.J. Kohler, 2015.

On occasion my team and I would walk the Nyarai trail via Air Terjun to enter the upper forest. Late one evening, while using the trail, we spotted Yanda and several other guides waiting for the last of the tourists frolicking in the river below. We sat for a while chatting. First we talked about the forest, which led to deeper discussions of the impacts of tourism that seemed to be weighing heavy on the minds of Yanda and the other guides. They told us how money and litter were causing conflict and the community leaders were not happy with some of the actions of young tourists coming from the city. I vividly recall Yanda stating: "*This is not what we planned, we want to use our skills.*" Yanda and the other guides wanted to show the visitors that they were not just escorts, lifeguards or litter collectors. They were part of the forest and they wanted to use their guiding to tell people of the *Minang Adat*, share traditional stories and show them that there is much more to the forest than the waterfall. They wanted to work in tourism using similar skills to Ramly and Amek in our research team. We left the guides with the promise that we would come to Nyarai when we finished in the forest and help them develop a plan or a vision that met the cultural needs of the community, something they could all be comfortable committing to.

Biocultural Diversity Conservation and Tourism

As one would expect, the number of tourists flooding to Nyarai began to decline as sharply as it had begun. This caused many local men to revert back to the forest logging and hunting, as the financial risk of waiting to see whether tourists would come each day or not became far too great.

As agreed, we returned to meet with Yanda and the guides in Nyarai village a week later. Yanda had organized the village leaders to meet with us, and together we discussed ideas around harnessing the community's ecological, cultural, linguistic, economic and spiritual capacity to make their tourism initiative work sustainably. Ramly and Amek were key, as they reminded others of the value of their forest-based education and traditional knowledge. Over the following weeks, we supported the community to develop a framework for biocultural diversity conservation unique to the local area and Minang values. We found that, over a short time and many meetings, the community began to change the way they viewed their tourism potential and value their connection to the forest. We were creating the first steps to a protected area of the mind.

The community focused on ways of giving voice to everyone and everything, including nature's voice, through traditional stories and the Minang spirit of place, the tangible and intangible. Our part in the process was to develop a pilot training program for the new guides of Nyarai. While this is an ongoing learning process for everyone, we appear to have found a formula that is restoring the link between people and nature, while considering the modern demands of everyday life now present across Indonesia. Today we encourage people to visit the Gamaran Protected Forest and experience the Minang culture, language, stories and nature through the traditional Minang foods or the art of *Silat*—the traditional martial art of the region sometimes referred to as *Silat Harimau*, the "dance of the tiger". Our training in biocultural diversity conservation tourism is now being developed across all the local villages thanks to local people like Ramly, Amek and Yanda.

Post Scriptum: *In good news for biocultural diversity conservation, in October 2015 the Gamaran Protected Forest project was nominated by EXPED for European Outdoor Conservation Association (EOCA) international conservation project support funding. In an online vote, the project went on to win the outdoor category. For more information on Tom's work, see:* www.tomcorcoran.org.

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Fostering Well-being Through BIOCULTURAL DIVERSITY:

THE LAS NUBES PROJECT IN A BIOLOGICAL CORRIDOR in Southern Costa Rica

Felipe Montoya-Greenheck

Throughout history, peasants around the world have faced the threats of empire, urban expansion and the lure of urban opportunities, over-taxation, and both abandonment and persecution by the state. In our generation, they have also been confronted with dispossession by the corporate machinery, lubricated by neo-liberal international agreements favoring free trade. Add to this the permanent challenges of climate variability with droughts and floods, crop blights and pests, now increasingly aggravated by global climate change. Yet, against all odds peasants persist, and continue to feed the majority of the world on a diminishing land base.

When many of these pressures displace peasants to marginal lands, moving them to the frontlines of the agricultural frontier, and at the edge of territories not fit for farming, but ideal for conservation, peasants are often forced to eke out a living at the expense of degrading fragile lands. This scenario, repeated the world over, has led many to place the blame of environmental destruction, such as deforestation, hillside erosion, and overhunting, among others, directly upon peasants and their subsistence livelihoods. Thus, when the opportunity arises to work alongside peasants at the agricultural frontier, bordering rainforests, to collectively come up with alternatives that will both improve peasant livelihoods and advance environmental conservation, the outcomes are not only of local relevance, but of global import, too.

That is the case of the Las Nubes Project, carried out by the Faculty of Environmental Studies of York University, Canada in the Southern Pacific region of Costa Rica. The Las Nubes Project began in the late 1990s, when philanthropist Woody Fisher donated

Las Nubes Forest Reserve, donated by Dr. Woody Fisher to the Faculty of Environmental Studies at York University. Photo: Felipe Montoya, 2013

to the Faculty the Las Nubes Private Reserve, a 120-hectare tract of rainforest bordering the Chirripó National Park, which forms part of the largest protected area in Central America. Las Nubes is located in the headwaters of the Peñas Blancas River, whose watershed is home to a handful of rural communities dedicated mostly to the cultivation of coffee, sugarcane, and pasture for grazing cattle.

Many of the members of these rural communities self-identify as *campesinos*, or peasants, and they assume this identity with a sense of pride and defiance, well aware that *campesinos* are seen as backward, unsophisticated, and poor. Their *campesino* identity is derived not only from their productive activities of cultivating the earth, but also from their cultural upbringing and values, their sense of place and rootedness, and above all from their love for the land. In their own words:

"There is no profession in the world that could pay me…that could give me the satisfaction that cultivating the land does."

"Against all odds peasants persist, and continue to feed the majority of the world on a diminishing land base."

"*A* campesino *is someone who is born, grows, gets old and dies in the countryside. Many times he is the only one who can feel the struggles of life. God knows that* campesinos *have to deal with many struggles. Ever since* campesinos *have existed, God has been there supporting them."*

"Campesinos *are the umbilical cord that connects the land to the people… You may produce tonnes of computers but you cannot eat them… When a baby cries, you cannot give him a piece of… you have to provide the baby with milk! This is what governments and urban people cannot understand!"*

"Nature, the rivers, the songs, the day and the night… everything looks beautiful here. I cannot replace the beauty I have here… anywhere. Watching the mountain makes me feel very happy… I have seen it since I was a child. Watching nature, trees, animals… this has been part of most of my life."

When Dr. Fisher made his donation, York University professor Howard Daugherty was already doing research on ways to achieve sustainable development in the area. During the 1990s, the concept of Sustainable Development had become mainstream, at least in discourse, with over 170 nations signing on to its principles at the 1992 Earth Summit in Rio de Janeiro. However, the practice of sustainable development—of finding a balance between economic, social and environmental objectives to serve the needs of present

Isidro Céspedes, local coffee grower, Alexander Skutch Biological Corridor. Photo: Felipe Montoya, 2014

generations without compromising the needs of future generations—was much more elusive. The rural and peasant communities in the Peñas Blancas River watershed, nestled inbetween forest patches, might be a good place to seek ways of implementing sustainable development strategies.

A century before, in the 1890s, the region was predominantly forested, and indigenous inhabitants were being displaced by the first white settlers who arrived there in search of new lands to farm. In the 1930s, construction of the Interamerican Highway began in the region. During this time, a young American naturalist, Alexander Skutch, found his way to the area and settled in a forest next the Peñas Blancas River. By the 1990s, Alexander Skutch's farm remained one of the few forest patches in a landscape converted mostly to farmland. Finally, Alexander Skutch sold his farm, Los Cusingos, to the Tropical Science Center, a Costa Rican research center, which would serve as steward of his 78-hectare forest. In 2005, the Tropical Science Center, along with York University and the local organizations and communities, created the Alexander Skutch Biological Corridor (ASBC) to link Los Cusingos at the lower end of the Peñas Blancas watershed, to Las Nubes at the upper end, with the objective of promoting environmental conservation and improved community well-being through the implementation of sustainable productive activities. In the words of a local *campesino*:

Resident of the Las Nubes Forest Reserve. Photo: Felipe Montoya, 2013.

The possibilities of community-based eco-tourism in the Alexander Skutch Biological Corridor. Photo: Felipe Montoya, 2014

Planting trees in the Alexander Skutch Biological Corridor. From left: Felipe Montoya and Aaron Albrecht, field course student. Photo: Felipe Montoya, 2015

"Before, this was pure paradise. I grew up seeing all types of animals, and during some time they were not here anymore, but now they are coming back… I think this is happening because of the creation of the corridor. What would we do without nature? Having a biological corridor helps people mature the idea of preserving the trees and the sources of life for human beings."

The creation of a biological corridor as a way of caring for biological diversity is intuitively understandable. By linking forest patches through reforestation, and implementing environmentally friendly farming practices, such as tree-shaded crops, reduced biocides, and agro-ecological techniques, the territories of many species are extended, allowing animals to find food, shelter, and mates more readily. This, in turn, fosters the functions of these animals as seed dispersers and pollinators, and creates a positive feedback loop that further expands these ecosystems and enriches species diversity. But how might this contribute to improving peasant livelihoods? For the communities in the ASBC, whose sources of income are limited, variable, and often unpredictable, the possibility of complementing their agricultural earnings with rural community ecotourism was one option that seemed potentially promising.

"There is still much work to be done … to find a balance between increasing the economic benefits of ecotourism and limiting the many potential threats that tourism may bring."

Rural community ecotourism is an industry that celebrates and favors biological as well as cultural diversity. From its inception, in response to local interests, the Las Nubes Project sought to facilitate and promote a type of tourism that would remain in the hands of the *campesinos* in the corridor. Every year, the Faculty of Environmental Studies takes a group of students on a field course to the ASBC. During their stay, local homes provide room and board to the students. In this way, local families are able to complement their income from farming by providing these services to visitors to the ASBC. However, the supply of lodging services among these communities far exceeds the demand created by York University's students. Despite a few other educational institutions also bringing student groups to the ASBC throughout the year, the income provided by this scale of tourism is very limited. While

it currently permits an intimate exchange between locals and visitors, whose benefits extend beyond the monetary transaction, there is still much work to be done in the ASBC to find a balance between increasing the economic benefits of ecotourism and limiting the many potential threats that tourism may bring.

The mission of the Las Nubes Project is to contribute to a community-appropriated, cross-cultural, transdisciplinary, inter-institutional process of local livelihood improvement linked to environmental conservation practices. In this spirit the Las Nubes project has sought to diversify livelihood options that are conducive to environmental conservation. An early initiative was to market shade-grown coffee cultivated by local small-scale farmers. York University was able to link local farmers co-op CoopeAgri with Canadian coffee retailer Timothy's to sell *Las Nubes*-brand coffee under an agreement that, for every pound of coffee sold, Timothy's would donate one dollar to the Las Nubes Project to invest back into the ASBC in research, education, and community projects.

For the past three years, during the summer field course, the Faculty of Environmental Studies and local community members have also organized the Alexander Skutch Festival, to showcase the biocultural production of the ASBC. This festival features stands for local artisans to sell their wares, for local organizations to present their projects, and for York University students to provide interactive environmental education activities. The festival also serves as a venue for performances by local dance groups and musicians, and it has grown to include ideas from the local youth and other community

Traditional horse races at the 2013 Alexander Skutch Festival, Quizarrá. Photo: Felipe Montoya, 2013

members, such as horse races, a dog show, and a bike rally within the ASBC. Through the sale of food, the festival raises funds for the local school. Ultimately, this event is envisioned as an opportunity to exhibit the biocultural richness of the ASBC and to strengthen people's collective identity around the corridor.

An ongoing effort aiming to strengthen local capacities to interface with globalization through knowledge mobilization is an International Development Research Centre (IDRC)-funded project to create an online map-based interactive information hub meant to allow local residents to upload information about their community tourism offerings, as well as access information relevant to the ASBC. Ancillary to this is the recent project to establish a local library and computer resource center, la Casita Azul (so named after the blue-painted office building of the local aqueduct committee, part of which houses the library). The objective of this space is to provide computer and internet training and facilities, especially to local women and youth.

"Biocultural diversity is inextricably linked to the respectful stewardship of the biosphere in which we live."

The Las Nubes Project is also building a research, education, and community outreach center across the river from the Las Nubes Forest Reserve, to serve as an international venue for performances, conferences, seminars, workshops, classes, and gatherings dedicated to issues of sustainability, conservation, and community well-being, as well as a space for researchers dedicated to topics relevant to the ASBC. Besides bringing experts from around the world to the ASBC, this space hopes to take the ASBC to the world, as an example of long-term collaboration between local communities, academia, and research organizations to promote rural livelihood improvement linked to environmental conservation.

Already this type of collaboration has generated important results for local biocultural well-being. With the liberalization of the energy sector, opening strategic state institutions to private competition, in the last few years there have been numerous bids by private corporations to build hydroelectric dams throughout Costa Rica. The southwestern slopes of the Talamanca mountain range are the source of numerous rivers, now threatened with the construction of close to twenty damns, among them the Peñas Blancas River in the ASBC. Community mobilization and assistance by York University in the form of targeted research have made it possible to fend off the threats to the social-environmental well-being represented by the proposed hydroelectric dams.

The collective struggles to improve the lot of the common people while protecting the commons—such as the forests and the rivers that are the home and life-support of an abundance of life forms and the source of well-being for local communities—are not only driven by recognition of the benefits provided by recovering and safeguarding these commons. Importantly, they also stem from recognition and celebration of the intrinsic value of the biocultural diversity that is inextricably linked to the respectful stewardship of the biosphere in which we live. While there is still much work to do in the ASBC to bring us closer to the goals of social-environmental sustainability and well-being, the Las Nubes Project looks upon the Alexander Skutch Biological Corridor and its rural and peasant residents as a promising arena for achieving a small part of that desired world in which many worlds are possible.

The Las Nubes Project can be found at:
http://www.lasnubes.org/

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Isafarn NUDRAR

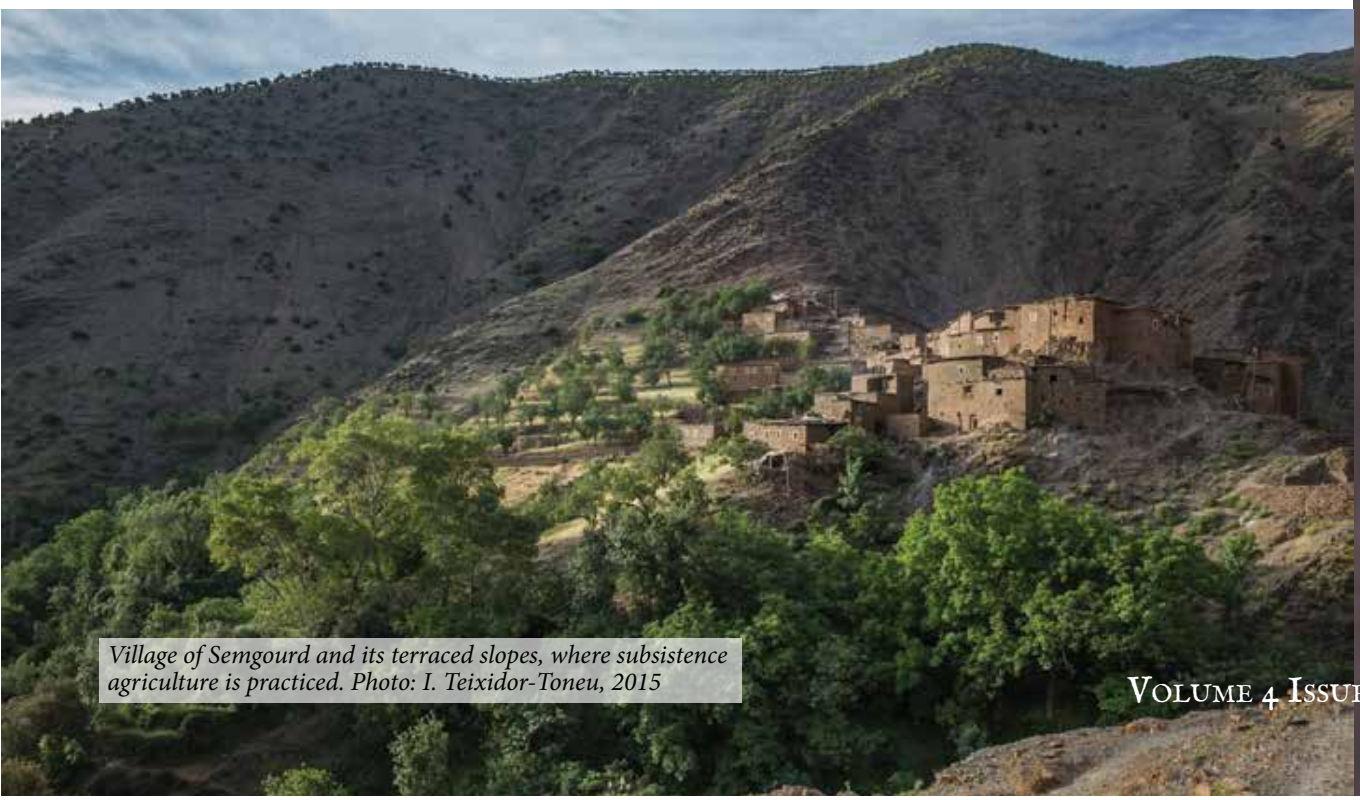
FLOWERPOTS HELP PRESERVE BIOCULTURAL DIVERSITY in the High Atlas, Morocco

Irene Teixidor Toneu

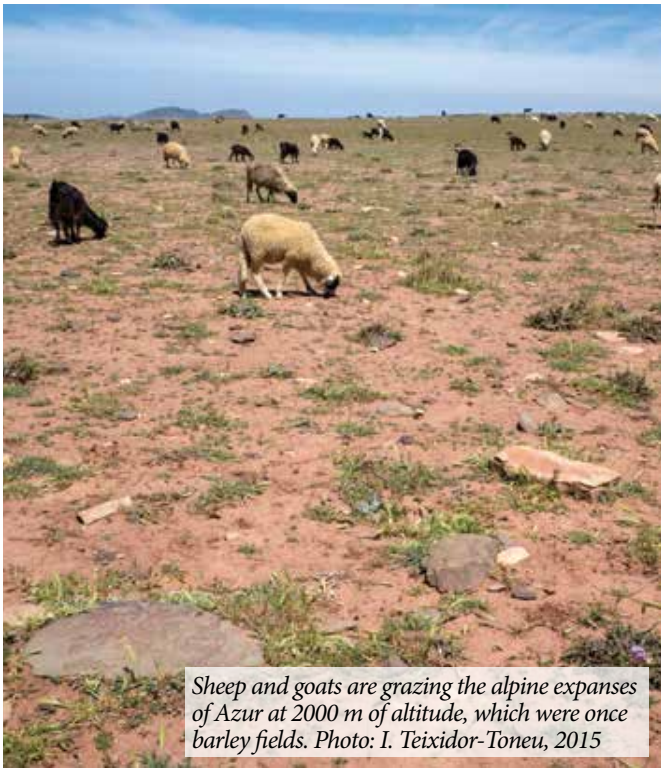
Isafarn nudrar means "medicinal plants from the mountains" in Tashelhit, one of the three Berber languages spoken in Morocco. Recently, in collaboration with the Global Diversity Foundation, I spent six months documenting medicinal plant use in the High Atlas and understanding the environmental and cultural landscapes in which plants are used. Once there, I became aware that climate change on the one hand, and new social narratives on the other, are forces threatening local plant conservation and traditional sustainable livelihoods. How can both human and ecosystem conditions in the High Atlas improve? The answer: flowerpots. In my search for ways to find locally sound solutions, I fell in love with what is called "participatory methods in development": establishing a dialogue between locals, scientists and the administration. And through these conversations a project for small-scale cultivation of medicinal plants arose.

A shared taxi can drop you off at the rural commune of Imegdale, after a one-and-a-half hour drive south of the commercial hub of Marrakech. By then you are probably dusty and your joints are complaining from sitting in an awkward position, piled in the taxi with another six people. But you are in the midst of the beautiful High Atlas Mountains, on the border of Toubkal National Park. Look around and it will not take you long to realize that subsistence agriculture and pastoralism are the backbone of the community's economy. As in most of the High Atlas, in Imegdale barley, almonds, and walnuts are grown in terraces along steep slopes. Women trek for hours in search of fuelwood for cooking and fodder for the family cows, because the animals cannot walk the precipitous trails to the patchy grazing areas by the streams. Men herd their goats and sheep across the mountains in a seasonal pattern of transhumance, or migrate for wage labor.

These communities are experiencing environmental degradation that is both the cause and the consequence of rural poverty. Precipitation in North Africa is likely to decrease between 10 and 20 percent, while temperatures are likely to rise between 2 and 3 degrees Celsius by 2050. Decreased precipitation has an impact on local livelihoods,



Village of Semgourd and its terraced slopes, where subsistence agriculture is practiced. Photo: I. Teixidor-Toneu, 2015



Sheep and goats are grazing the alpine expanses of Azur at 2000 m of altitude, which were once barley fields. Photo: I. Teixidor-Toneu, 2015

with shepherds abandoning traditional transhumance pastoralism, which increases pressure on available arable land and groundwater resources. Alternative crops have recently begun to be grown. In some valleys, apples are now cultivated, and people face new problems related to the use of chemicals in non-native fruit agriculture.

However, overgrazing is still a major threat to plant biodiversity, along with desertification and soil erosion, since big herds continue to graze alpine landscapes. Moreover, some traditional agricultural practices, such as barley cultivation on high-altitude plains, are currently only maintained in the most isolated mountain enclaves. High-altitude zones are public areas managed by the government, which for some time in the last decade stopped

Rachid collecting medicinal roots in Gurza, high mountains south of Semgourd. Photo: I. Teixidor-Toneu, 2015

issuing cultivation permits because of reforestation plans. Reforestation, however, never happened. Meanwhile, people stopped spending their summers in temporary homes above 2,000 meters. The fields were abandoned, and the areas subsequently became available for herds to pasture. Lacking their natural vegetation cover, these plains were vulnerable to erosion during seasonal rains. Once the permits became available again, the alpine expanses were not as suitable for agriculture anymore, and people had already found alternative ways of "earning their bread". Younger generations, who would have normally contributed substantially to alpine barley cultivation, are now looking towards the city rather than uphill.

Different attitudes across generations of Ishelhin, the Tashelhit-speaking Berbers of southern Morocco, are observed not only regarding agricultural practices, but also around medicinal plant use. Young mothers do not know as much about plants as their mothers. Most of them gave birth to their children in hospitals, where they were exposed to public narratives on the danger of using medicinal plants. One of the local elders said: "*Medicinal plants are better than pills. Pills cure you of one disease but give you another one. Also, women cannot read, so we don't understand the instructions provided with medication and then don't use them properly. But young women prefer to go the hospital even though sometimes you get there and it is closed or the doctor is not there*" (field notes, May 18, 2015, village of Ighrm Tknt).

"Overgrazing is a major threat to plant biodiversity, along with desertification and soil erosion."

Medicinal plant use is being replaced by public health that still does not provide satisfactory service. And this is just one part of the bigger picture. Ishelhin are people in transition: urbanization, international migration, the increased consumption of market commodities, the mass media revolution, and state education are reshaping the lives of rural residents who stay behind as family members migrate. However, while they are increasingly being exposed to "globalization", traditional ecological knowledge still plays a key role in their daily lives.

Studying medicinal plant use allowed for discussion of harvesting and conservation of wild plant populations. Wild harvesting of medicinal plants provides cheap and readily available medicines, as well as an opportunity for the poorest to make some cash income, however minimal. The resource is open to everybody, which creates a challenge in regulating collection and maintaining harvest sustainability. Medicinal plants are collected in the field

margins and along the villages and field paths, as well as from the high mountains. The roots of some alpine plants are popular remedies, and shepherds bring the plants into villages when people need them. Medicinal roots are a key element of local pharmacopoeias, since all underground plant organs, particularly those from cold environments, are believed to be "hot".

Women sometimes collect them too, when they travel uphill to gather *auri* (*Stipa tenacissima*) used as fodder. Fadma, my research assistant, told me that, the last time she visited Tirardin (one of the commune's old alpine barley cultivation expanses), she could see many holes in the ground where medicinal roots had been extracted. When the root is used, plant populations become very vulnerable, since harvesting is destructive: "*At some point Rachid mentioned that roots regrow after being picked, because there is always a bit of the root left behind, otherwise they would be extinct by now. But Mohamed clarified that this is only true for* igudi (*Pterocephalus depressus*), *because it has a very long root, but not for the other plants, where the whole root is extracted from the ground*" (field notes, May 5, 2015, village of Semgourd). Climate change and longer drought periods increase the destructive effect of the harvesting of alpine medicinal roots; plants have greater difficulty in maintaining their populations.

Long periods of ethnobotanical fieldwork are about patient observation and building relationships. They are about endless conversations about various topics, with every person that wants to talk to you. And this is how locals that had become friends, other Global Diversity Foundation collaborators, and I started discussing what could be done to enhance local traditional livelihoods and contribute to the conservation of the natural environment in Imegdale. Human decisions are a major influence on future pathways to conserve biological and cultural diversity. Through discussion and dialogue, we looked for creative solutions that would benefit both plants and people. One of the local initiatives in response to these challenges and opportunities is to develop the cultivation of selected medicinal plant species. Unlike apples, peaches, and other non-native crops, these plants are well adapted to local soils and climate and can be grown organically.

One might argue that restriction on grazing would be a more direct measure to improve the physical environment and preserve biodiversity in the High Atlas, but this would have a negative social impact and disrupt local politics of labor organization that are central to village life. In the High Atlas, customary social institutions organize labor across household boundaries. To be successful in the long term, plant conservation strategies must be accepted by these local institutions and managed by them. David

Awgdmi (Armeria alliacea), one of the locally over-harvested medicinal roots. Photo: I. Teixidor-Toneu, 2015

Crawford, who studied change of rural livelihoods in the High Atlas under globalization pressures, wrote: *"Human/environment interactions are always mediated through social groups, and at least in the High Atlas economic decisions cannot be understood outside of the households, lineages, villages and irrigation collectives in which they are embedded."*

Small-scale medicinal plant cultivation can be easily integrated into the social-agricultural organization fabric, and it contributes to plant conservation and local development in at least three ways. First, it provides an *in situ* conservation strategy for threatened medicinal plant species, adding to the already existing practice of cultivation of valued wild species in home gardens. When people dropped barley cultivation in alpine areas, some took *tafleyout*, a threatened endemic mint (*Mentha gattefossei*), with them and planted it in flowerpots around their homes. Second, cultivation also lowers the pressure on wild medicinal plant populations and makes the plant sources more accessible for home use, since these are remedies widely used to treat common ailments. Third, when cultivated medicinal plants are sold in local markets, they provide an additional source of income for the commune.

The incorporation of medicinal plants into small-scale farming systems, such as those in the High Atlas, requires low economic inputs, and is a steadier source of raw materials when compared to wild populations, where productivity is notoriously inconsistent. If we are successful in bringing some local species into trade, additional income could reduce the need for sheep and goat herding, and this is why we are working closely with shepherds. They are key players in all of this alpine medicinal plant business, both in terms of the threat posed by their trade and the ecological knowledge they hold about these plants. Besides *tafleyout* (*Mentha gattefossei*) and *awgdmi* (*Armeria alliacea*), we will start cultivating *hmiku* (*Cistus laurifolius*), whose seeds are extremely valuable: they are sold for a high price and make one of the best remedies against pain when ground and mixed with local honey.

Flower pots in the village of Ighrm, in which women grow medicinal plants. Photo: I. Teixidor-Toneu, 2015

Finally, this initiative will help revalorize local ecological knowledge, since local cultivation takes into account traditional practices and focuses on locally relevant plants. People like what is fancy, like pills for headache. Or apples. But pills are expensive, and Fadma and her eight-year-old daughter in Ighrm Tknt were telling me how hard it is to breathe in the village when farmers are spraying the apple fields. Initiatives based on local ecological knowledge bring attention back to its value and importance in modern and modernizing societies. Sustainable development is achieved when both the human and the ecosystem conditions are improving, including both the social dimension and the relationship between environmental and economic factors.

Keith Basso expressed it beautifully: "wisdom sits in places". Cultures are bound to those landscapes they call home. The commune of Imegdale is Ishelhin, with the Tashelhit language to talk about its mountains, its plants, and the knowledge and practices that are quickly lost when the younger generations disengage with agricultural practices or move away toward the cities. Initiatives such as the one described here aim to enhance local cultures and livelihoods while preserving the natural biodiversity. With committed locals and through basic, key actions, we help trigger alternative narratives about culture, language, and the relationship between people and land, helping to preserve biocultural diversity in this beautiful corner of the world.

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Orpul as a PLACE OF MIND:

INTEGRATING LOCAL RITUAL INTO SCHOOL CURRICULUM to Sustain Biocultural Diversity in Tanzania

Heidi Simper

Landscape image of Eluway village where Noonkodin is located. Photo: Heidi Simper, 2014

"A people without the knowledge of their past history, origin, and culture is like a tree without roots."

--Marcus Garvey

During the rainy season in the bush of the Great African Rift Valley in Eastern Tanzania, amid Maasai culture, acacia trees, and cries of hyenas in the night, I was conducting my Master's research on indigenous knowledge transmission at Noonkodin, a secondary school within a small rural village. At last the rain had let up and the morning of *orpul* was finally here. When I asked the village Elder Kutukai where *orpul* would be held, he reminded me, "*Orpul* is not a location, it is a place of mind." *Orpul* is a Maasai healing ceremony, known to last for days. Traditionally it is used when someone is ill, for overall wellbeing, and for young warriors preparing for circumcision. During the course of this ceremony, medicinal plants are collected and prepared for consumption as a soup and paired with a large amount of meat. All the while, there is singing and storytelling. *Orpul* is therefore a significant means by which indigenous knowledge is transferred between generations, particularly knowledge about medicinal plants. It was this function that was the focus of my research.

Knowledge is the basis of life, and Indigenous Knowledge (IK) is a wealth of information held by local people about the surrounding environment. This specialized knowledge is passed down from generation to generation through pathways such as song, ritual, and everyday interactions with the environment. There is an increasing loss of IK worldwide, which has a negative impact on the world's diversity: biological, cultural, and linguistic. Each form of diversity influences the other, and together they create biocultural diversity, which is vital, allowing for adaptation to a changing environment. The passing on of knowledge is critical for maintaining a culture's IK, thus also maintaining cultural diversity. Without the continued transmission of knowledge to the next generation, specialized information dies with the Elders.

One of the many causes of IK loss is the influence of modern schools that introduce students to non-indigenous worldviews, such as the notion that to be educated in western ideas is progress and that "traditional" is something to overcome. At Noonkodin, many of the students travel far from home, coming to Eluwai from neighboring rural villages, and stay at the school over the duration of their term. During this time, they are not directly exposed to their culture's defining customs, language, and day-to-day activities. If IK is not being transferred at home because of schooling, then IK transmission needs to happen at school. Around the world, this is not generally the case, and unfortunately western knowledge is replacing traditional knowledge, while they should rather exist side by side. In this regard, Noonkodin is unique, in that IK is included in the curriculum.

The term Maasai refers to speakers of the Eastern Sudanic language known as Maa, who currently inhabit the southern part of Kenya and the northern districts of Tanzania. The world recognizes the Maasai for their lifestyle centered around cattle, cultural tenacity, and customary way of dress. They are traditionally nomadic pastoralists, always on the move herding their livestock to greener pastures. Due to modern pressures and land ownership disputes, a large number of Maasai now lead a sedentary lifestyle.

Many people in my study area live a considerable distance from the nearest government health facility, making access to modern medicine difficult and costly. There is also the common local belief that natural medicine is better than modern medicine. In addition, traditional medicine tends to be attractive as it is cheaper than western medicine. Therefore, Maasai rely heavily on medicinal plants for health care purposes. Traditional medicinal plants used by the Maasai, including those used at *orpul,* have been demonstrated to be pharmacologically efficacious. However, knowledge of these plants' medicinal aspects is vanishing due to the loss of Maasai culture and IK.

Medicinal plant knowledge transmission among the Maasai is not well understood. My research aimed to gain a better understanding of Noonkodin students' experience with the *orpul* healing ceremony, while determining the best way students acquire medicinal plant knowledge. Having students participate in cultural ceremonies is not part of the Tanzanian curriculum. Fortunately, because Noonkodin includes IK as a part of its intercultural curriculum, we were able to hold *orpul* as part of the students' course. Village Elder, Kutukai was the first teacher of the Indigenous Knowledge class, which was first held under the shade of an acacia tree. The students in my study are predominantly Maasai, and because classes are divided by academic performance and not age, they range in age from 12 to 24.

While in Tanzania I learned the phrase, "Tanzania time," which refers to the way Tanzanians regard, or better yet disregard, time. On the day of *orpul*, Musa—an Elder and my research assistant—and I went to meet the students in their classroom. It was apparent that they were running on "Tanzania time," as they were slow to arrive. The students were informed about *orpul* days before, yet no one seemed especially excited or even particularly wanting to be there. I felt a little discouraged, fearing that the students were not going to enjoy *orpul*. Musa and Kutukai, however, were hopeful and reassuring, so we focused on the day ahead.

When everyone was present, Musa began assigning chores to everyone, such as fetching water, collecting wood, herding the goats, and gathering the medicinal

Noonkodin Classrooms. Photo: Heidi Simper, 2014

Musa, a Maasai Warrior, Elder, and Heidi Simper's research assistant, herding the school's cattle in his traditional clothing. Photo: Heidi Simper, 2014

Students watching Maasai Warrior slaughter the goat during orpul. Photo: Heidi Simper, 2014

plants for the soup. I joined the students assigned to gather medicinal plants. Our leader on this plant hunt was a tall Maasai Warrior. He led us to the plants and we gathered them. A couple of the students were very knowledgeable, teaching and showing the rest of us the names and uses of the plants. I even tasted one of the plants said to be good for the throat and coughing. I chewed on the spongy stem, which tasted very strong and bitter, leaving a burning sensation in my mouth.

"Orpul is not a location, it is a place of mind."

When we returned from the plant collecting, we met everyone at the huts behind the school that we designated for *orpul*. Two of the male students choked the goats, and preparation of the meat began. We all watched as a Maasai warrior butchered one of the goats and an experienced student butchered the other. There were various raw parts of the meat that were passed around to eat, such as liver, kidney, and blood. Not everyone partook, but everyone was having a good time watching their classmates' reactions as they sampled the different meat parts. Everyone helped in the meat preparation. Those who had experience showed the others what to do.

During the course of *orpul*, I could feel a sense of enjoyment coming from the students. Their earlier passiveness had completely given way to smiles, laughs, and jokes. As the meat was cooking and it became time to make the medicinal soup, Musa gathered the students to teach them about the medicinal plants. He spoke to them in Swahili to make sure the students understood, as English is the third language for most of them. Musa passed around the plants for the students to touch and study while he taught the plant names, their uses, parts

Student showing us a plant and its uses during the plant hunt for orpul. Photo: Heidi Simper, 2014

used, and their preparation. I observed the students during this time, and they were all taking notes and intensely listening to Musa. This was the quietest I had seen them, paying close attention and even asking questions. Shortly after, the meat was ready and consumed by everyone. Once we finished eating, the soup was ready and was passed around. Everyone drank the soup with different reactions. Some really liked the taste, which was very bitter and oily. Others didn't like it but still drank it for the medicinal effects. As the sun started to set, the students expressed their sadness that *orpul* was over for the day. As we left, the students were singing and dancing.

An aim of my project was to find out whether there was a difference in medicinal plant knowledge acquisition between learning in the classroom versus learning at *orpul*. Therefore, half of the students did not participate in *orpul* and learned about the same plants from the same Elder, but in their usual classroom setting. There is not much to say about this classroom environment other than it was that of the average western learning experience. Musa was at the head of a rectangular-shaped classroom, standing in front of a chalkboard, students sitting at their desks, some taking notes, and fairly quiet with occasional whispers. Musa taught of the plants the same as he did at *orpul*, minus having the actual plants to show.

"Participating in orpul, and particularly in the plant collecting, significantly improved the students' plant knowledge acquisition."

Before I began my research, I proposed that the students who went to *orpul* would gain a better knowledge of medicinal plants compared to students who learned purely in a classroom setting. The students were tested before and after the learning experiences. The results show that participating in *orpul*, and particularly in the plant collecting, significantly improved their plant knowledge acquisition. The *orpul* students, and those who had attended *orpul* before, did significantly better than those who had not when asked to identify native medicinal plants, as well as in knowing their proper uses and preparation.

Musa teaching students about the medicinal plants at orpul. Photo: Heidi Simper, 2014

Students learning about plants in the classroom setting. Photo: Heidi Simper, 2014

Students enjoyed themselves at *orpul* while learning about medicinal plants, participating in the traditional slaughtering of a goat, and eating meat and medicinal soup. As one of the *orpul* students stated, "I was so happy and enjoying myself because it was a place where there was eating meat, making some story, and I was with friends so I was feeling very good." The fact that the *orpul* students seemed to enjoy themselves more than those in the classroom may have contributed to how well they did when they were tested on their medicinal plant knowledge. As many people experience, when an activity is enjoyable it is often more memorable. In addition, a few of the students claimed that *orpul* had cured a health problem of theirs, one of them stating: "I had fever, flu, and stomach problem, but after I had the meat and soup I was very fine."

As for the students' preference, half of the students preferred to learn in *orpul,* while the other half said they want both *orpul* and the classroom in order to gain both practical and theoretical experience. As one of the Noonkodin students wisely said, "Both are good, we can learn medicinal plants by names written in a book or somewhere in the class but is also good to learn in *orpul* because you can see them and practice."

My findings show that students exposed to *orpul* have a more extensive knowledge of medicinal plants, supporting the need to keep the tradition of *orpul* alive. A solution to the loss of IK is incorporating existing cultural knowledge into each school's curriculum. With medicinal plants being a keystone in Maasai culture, the effective transmission of medicinal plant knowledge is an important aspect for the maintenance of their cultural identity and vitality.

Sadly, the frequency of *orpul* is in decline. By including it and similar local rituals into the school system, we will help to preserve what is so important to a culture's identity, which in turn will help conserve biocultural diversity. Including *orpul* in the school curriculum can not only provide a practical way for medicinal plant knowledge and culture to be transmitted, but also encourage people to connect with nature, which can lead to living sustainably within it.

It is important for students to realize that their culture is something to be cherished. Western ideas and technology can help improve quality of life, but it cannot replace the traditional medicines that come from nature. Many cultures around the world rely on plants for their wellbeing, and even the western world has begun to see the value of medicinal plants and/or natural products. If biocultural diversity can be preserved by including indigenous rituals into school curricula, the same educational system that has contributed to the loss of biocultural diversity will aid in sustaining it.

Learn about the Noonkodin school project at http://www.serianuk.org.uk

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Jordan Engel

Decolonial Mapmaking:

Reclaiming Indigenous Places and Knowledge

"More indigenous territory has been claimed by maps than by guns. This assertion has its corollary: more indigenous territory can be defended and reclaimed by maps than by guns."

--Bernard Nietschmann, geographer

Throughout time and across cultures, the thing that is often most important to a people is land. While global industrial society's connection to the land is waning, it remains ever-present in indigenous cultures, despite (or perhaps in defiance of) near constant pressure from colonial powers to separate indigenous peoples from their lands. This connection is at the heart of what we call biocultural diversity.

Land theft has historically happened through various and often violent tactics, but as Bernard Nietschmann points out, colonization often begins with mapping the land. Colonial powers, without the consent of indigenous peoples, draw up political borders that, more often than not, do not reflect any real natural or cultural boundaries. They are imaginary lines that are superimposed on the land by people who have little knowledge of the land. These people then proceed to populate their maps with names for rivers, mountains, and towns—names that are invented specifically for this purpose. Once again, these names often fail to represent anything meaningful about the local ecosystem or indigenous culture of a precise location. They are, instead, chosen after important people (like Johannesburg, Vancouver, and Sydney), or after places from the colonial culture (like New York, New Orleans, and New South Wales). Indigenous place names, by comparison, are usually uniquely tied to a specific location—describing the landscape, or a species that proliferates in that area, or a cultural event that occurred at that location.

Early colonizers were likely well aware of what they were doing. As they made their way across the yet-unexplored-by-Europeans land, they kept fairly detailed records of where different tribes lived and the indigenous names for local landmarks. Take the example of Henry Schoolcraft, an early 19th century US Indian Agent. He learned Anishinaabemowin (the Ojibwe language) and meticulously documented Anishinaabe place names. As a geographer, he had the privilege of deciding what future generations of European settlers would call the places he went through. Rather than passing on the knowledge of indigenous place names, Schoolcraft was notorious for creating faux Indian place names. For example, Lake Itasca, the source of the Mississippi River, was named by Schoolcraft. It has no meaning in any language. Many people wrongly assume it is Anishinaabe in origin, but the Anishinaabe name for the lake is actually Omashkoozo-zaaga'igan, which translates to "Elk Lake." Schoolcraft and others like him probably thought that indigenous place names were too long, and assumed that European settlers would not be able or willing to pronounce them correctly. In the instances when colonial

"While global industrial society's connection to the land is waning, it remains ever-present in indigenous cultures."

A portion of a map titled "Gakaabikaang Ashkibagi-ziibiing (At the waterfalls – At the greenleaf river)"—An east-oriented map of the Minneapolis-St. Paul area, USA, labeled in Anishinaabemowin (Ojibwe). Map by Charles Lippert and Jordan Engel, 2015.

settlers did adapt indigenous place names, the names were dramatically altered: Šikaakonki to Chicago, Huāxyacac to Oaxaca, Misi-ziibi to the Mississippi River. While these differences may seem trivial to some, they represent a deliberate erasure of indigenous cultures from the world map.

Because so much of the way in which modern people understand the world is formed by geography, the importance of alternative cartographies cannot be understated. Mapmaking developed independently in many cultures across the globe. Although in decline, there is a large diversity of ways in which the physical world has been and is represented. In Majõl (the Marshall Islands), ancient mariners developed charts made from coconut fiber and shells to indicate the location of islands, waves, and currents in the Pacific Ocean. In Kalaallit Nunaat (Greenland), European explorers in the 19th century found pieces of driftwood carved by the Inuit to represent the shoreline of the island. It was only during the Age of (European) Exploration that cartography began to become standardized around the world. Today, it is not unlikely to find identical world maps in classrooms on opposite sides of the planet, in spite of very different indigenous cultural understandings of geography. That cultural knowledge is rapidly being lost. Even though Europeans were the first people to

Marshall Islands Stick Chart. A rebbilib (stick chart) from Majõl (the Marshall Islands), circa 1920. The placement of the coconut fibers and shells indicates the location of islands, waves, and currents. The stick charts are the earliest known system of mapping ocean swells in the world. Retrieved from Library of Congress Geography and Map Division, http://lccn.loc.gov/2010586181

A map of Éire (Ireland) in Gaeilge (Irish). Map by Jordan Engel, 2015.

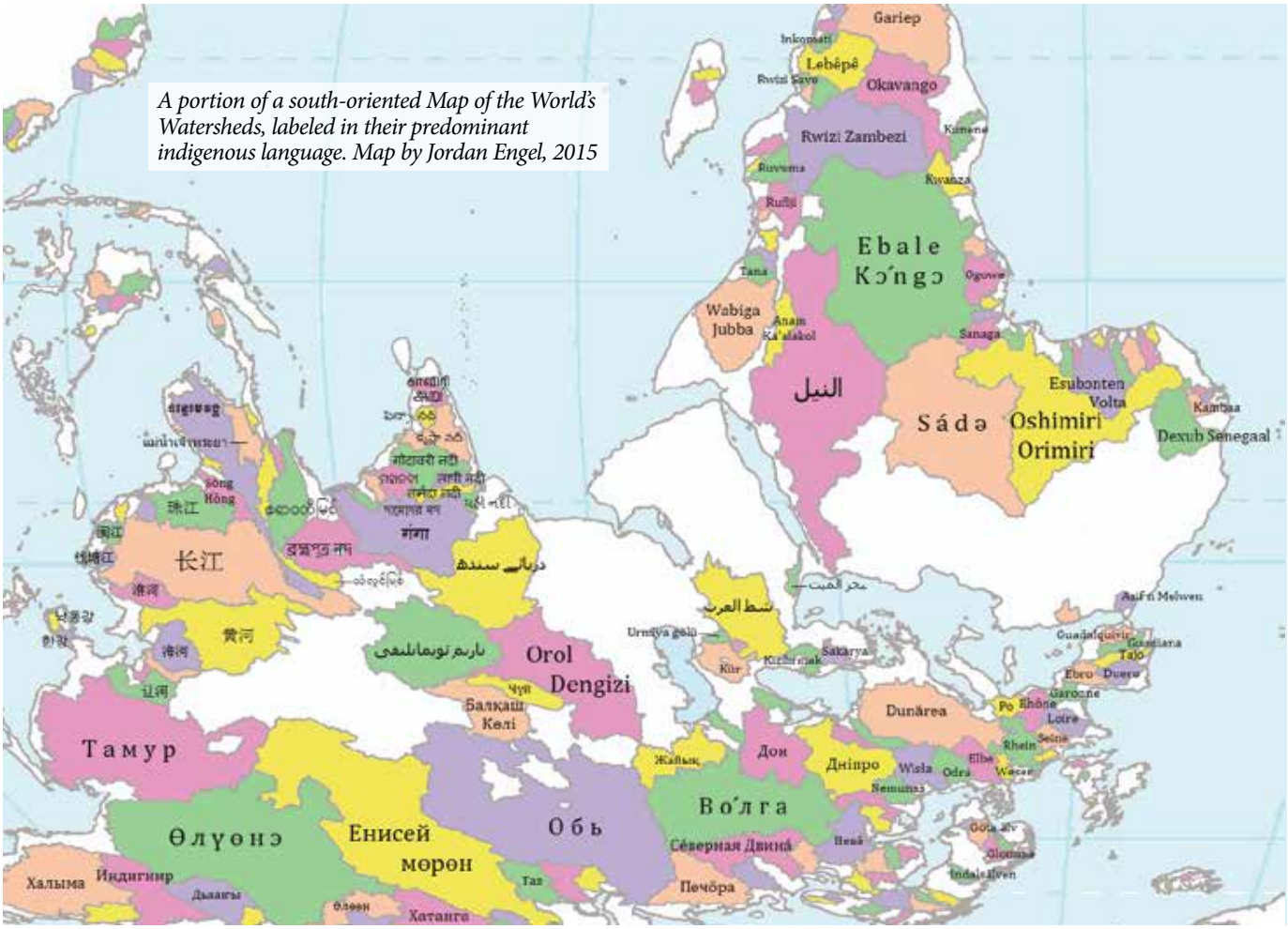
A portion of a map titled "Heeneisih'iinou'u biito'owuu (How the Lands are Named)"—The Central Rocky Mountains, USA, labeled in the Hinono'eitiit (Arapaho) Language. Research from the Arapaho Project. Map by Jordan Engel, 2015.

map the world, non-European peoples do not have to forfeit their right to map their lands in their own way. Mapmaking is an art, not a science, and the rigid international standardization that has been applied to it stifles individual and cultural expression.

That is why, in 2014, I started a project called the "Decolonial Atlas". The Atlas is a grassroots mapping project, the purpose of which is to bring together maps that, in some way, challenge our relationships with the environment and the dominant culture. Over the course of the project, indigenous language speakers from around the world have contributed their knowledge to produce maps from their particular cultural perspectives. The maps are usually borderless, with the exception of some that depict bioregional borders such as basin divides. There are maps oriented in every cardinal direction, depending on the traditions of that culture. To date, we have produced new maps in Anishinaabemowin (Ojibwe), Gaeilge (Irish), Hinono'eitiit (Arapaho), Kanien'kéha (Mohawk), Lakȟótiyapi (Lakota), Māori (Maori), Meshkwahkihaki (Fox), Myaamia (Miami-Illinois), Nāhuatlahtōlli (Nahuatl), ʻŌlelo Hawaiʻi (Hawaiian), Runa Simi (Quechua), Tamaziɣt (Berber), Tsoyaha (Yuchi), and more. They range in scale from metropolitan regions to global.

These maps almost always look vastly different from standard colonial representations of the same geographic area. It is amazing how a slight change of perspective can make the land we thought we knew unrecognizable. If we take away the political borders, turn the map so that North is no longer on top, and re-label every place in its original indigenous language, we come to realize that not only has the land been colonized, but all the people living on it as well.

For settlers, what we call a place determines in part our understandings of the land, as well as our attitudes toward its original owners. For indigenous peoples, place names are a source of pride, further contributing to the revitalization of their languages and cultures. The Decolonial Atlas is supportive of both settlers and indigenous peoples using our maps to help decolonize. Stylistically, the maps are colorful and artistic, with the hope that people will enjoy



A portion of a south-oriented Map of the World's Watersheds, labeled in their predominant indigenous language. Map by Jordan Engel, 2015

them enough to download, print, and hang them on their walls. They are made in an intentionally modern aesthetic, however. Antique map styles, while beautiful, convey that the subject matter is old, whereas the Decolonial Atlas asserts that indigenous peoples are not a footnote in history books, but are living and present in the 21st century.

The Decolonial Atlas is by no means the first project to explore indigenous cartography. There have been and currently are many community-based indigenous mapping projects, which are regularly highlighted on the website. In this sense, the Decolonial Atlas is the first "Atlas" of these projects—bringing together many local and regional maps to eventually make an indigenous mosaic of the entire world.

Progress is being made. Recently, the US government officially changed the name of North America's highest mountain from Mount McKinley to Denali. In Australia, the continent's largest lake was renamed Kati Thanda – Lake Eyre, combining the aboriginal Arabana and colonial English names. If enough of us insist on using these names, we can quite literally change the world. In the process, we can begin to reclaim our own cultural identities and renew our connection to the land. In this way, mapmaking is one answer to the question of how we—as individuals, as cultures, and as a species—decolonize.

The Decolonial Atlas project can be found at: https://decolonialatlas.wordpress.com/.

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STRENGTHENING the LINK BETWEEN Green "Fights" & Language "Fights":

A Proposal from Basque Country

Beñat Garaio Mendizabal

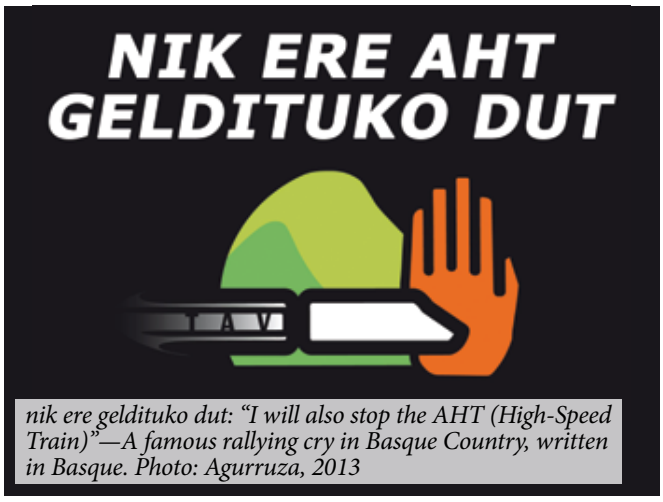
This magazine, and this "People's Issue" in particular, are the loudspeakers and meeting point for those of us who believe that there is an alternative in this world, another way to understand our lives. We resist thinking that we will live and die on the same errant planet, a planet that is being systematically destroyed by our neglect and cannibalistic attitude.

Global warming is a reality, and we may soon see how, for example, two entire countries (Maldives and Tuvalu) will disappear from the face of the Earth due to the rapid melting of the northern and southern polar ice caps. Survival of the fittest? No, it is definitely our fault.

Language shift, resulting in language death, is the decay of languages that can lead to their total disappearance. To be fair, a language does not die, but the speakers of that language stop using that language, shifting generally to a language of higher status. According to the last *Ethnologue* report, we have more than 7000 languages on this planet, but we should start the countdown: a language dies approximately every two weeks. Survival of the fittest? Not at all. A speaker may favor an alien language so as to have better prospects for their future; so as to avoid stigmatization from majority language speakers; so as to obey the orders of an autocratic regime that is promoting the language of the elite to the cost of others; and so on and so forth.

Indeed, language diversity and ecological diversity walk hand in hand. Moreover, we could argue that many language activists are also environmentalists, and vice versa. Interdisciplinary collaboration is vital if we want to achieve our aims; alone, we are too small to convince the silent masses, let alone the big corporations, the governments, the lobbies... Why don't we join forces to have a voice on these issues? Nobody apart from us is going to get off their comfy couches at home, unless they are persuaded, attracted, or motivated by a big wave.

Here, I'd like to talk about a specific spot in this world, called Basque Country. What can I say about it, if not that I love it with all my energy, and I am pleased when I see her virtues, but it hurts my feelings when I see her erring? My love of *Euskal Herria*, which means "the land of the Basque language", does not blind me, and I will do my best to contribute to the start of a change.



nik ere gelditukо dut: "I will also stop the AHT (High-Speed Train)"—A famous rallying cry in Basque Country, written in Basque. Photo: Agurruza, 2013

Until a century ago, my great-grandparents lived in a rural region where fishermen, shepherds and peasants had a very hard life, a life that could only be eased by their devoted love of God and the quite distinct culture, customs, and language that guided their way. But that mountainous green land was severely disrupted when the mining industry set up shop there, changing the social networks, bringing in many people with different beliefs and languages and destroying the landscape of several valleys. That was the beginning of the largest historical decay of the Basque language, a decay that has been present ever since.

General Franco's dictatorship could have inflicted the last stab to Basque Country, and therefore to the language, and vice versa. The regime's atrocious repression, witnessed by the entire world in the town of Gernika (Guernica), was supported by Franco's overt assimilationist policy (what some would rightly call linguicide), mushrooming industrial development, road infrastructure and urbanization, and the immigration of thousands and thousands of Spaniards brought in to work as cheap labourers, with not even the slightest effort to maintain the local heritage. Moreover, those immigrants worked side to side with many Spaniard peers who were already under major stress, putting in long work shifts in a new industrial environment, far away from their beloved homeland. Under these conditions, one can understand and empathize with the demographic and socio-cultural shift in Basque Country.

The history and the origin of the Basque language (Euskara) are very unique. Being an isolated non-Indo-European language, possibly the oldest in Europe, it is almost a treasure. But, to quote a reputed Basque linguist, the real miracle is how Euskara has survived under these harsh circumstances.

The language and political activists on both sides of the Pyrenees, the Northern Basques (in France) and the Southern Basques (in Spain)

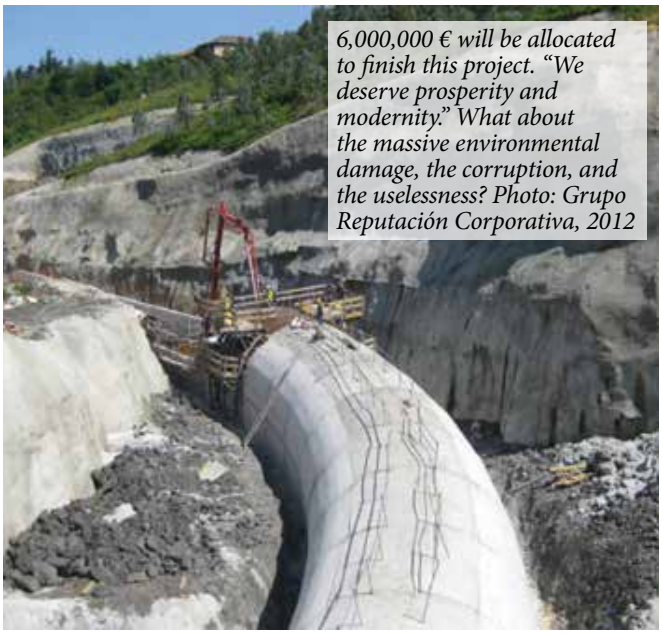
The way Basque farmers, baserritarrak, looked 100 years ago. Photos: Loreak Mendian.

Basque couple with common farming tools, and group of Basque farmers with popular musical instruments. These pictures were taken 100 years ago. Photos: Loreak Mendian.

have tenaciously worked to ensure a future for our past. However, the decay has not stopped, and even though the knowledge of the language is growing and growing, the use of the language is still declining. What else can be done?

But what about the environmental issues, you will ask. Well, the strong opposition of Basque society has not put a stop to many initiatives that are helping destroy our ecological diversity. As in many other parts of the world, fracking, the construction of huge infrastructure projects (especially roads and the High Speed Train), and more urbanization are all shaping our new "langscape".

First of all, the AP-48/AP-1 highway and the forthcoming High Speed Train will create massive ecological disruption, as roads and rail need to go through steep valleys and huge numbers of tunnels, and long high bridges have been and are being built. "*We need to move forward.*" "*We need to become a top region in Europe.*" "*We need to follow the path of modernity in order not to fall behind.*" "*These infrastructure developments will bring prosperity to this country.*" These are some of the mantras reflected in the mainstream media. So far, these projects have brought some prosperity, but just for the pockets of the development companies and their handmaidens, the politicians. The initial budget is being constantly exceeded. Several reports have begun to challenge the usefulness of "modernity". For example, the journey from Gasteiz (Vitoria in Spanish) to Bilbao will last about 40 minutes by train, when these days it can take no more than 45-50 minutes by bus! Moreover, the journey from Gasteiz to Donostia (San Sebastian in Spanish) can now be completed in 1:10 hours if the driver takes the new AP-48 highway, while by using the old N-1 route the "boring and never-ending journey" was 1:25 hours long! Prosperity will change our lives, right? It is true that the train could alleviate the high congestion of trucks on the main roads of Basque Country, but governments have chosen the most expensive and damaging alternatives. Why?

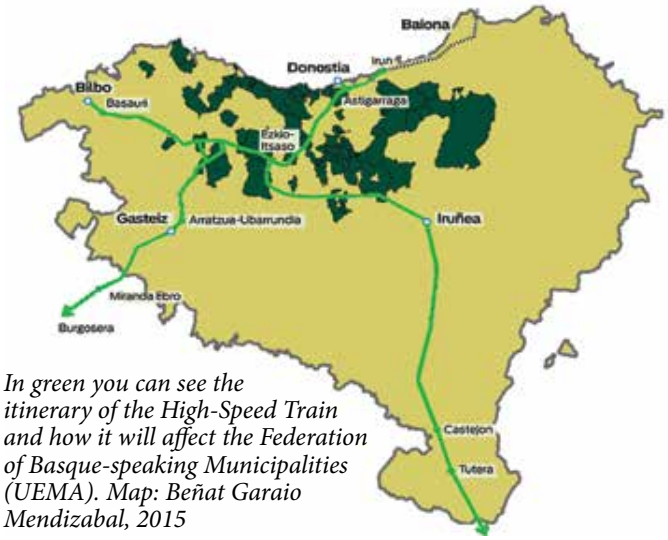


6,000,000 € will be allocated to finish this project. "We deserve prosperity and modernity." What about the massive environmental damage, the corruption, and the uselessness? Photo: Grupo Reputación Corporativa, 2012

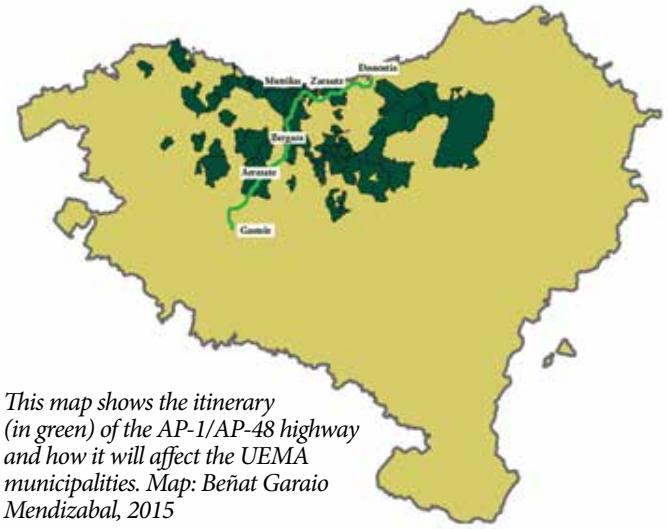
"The real miracle is how the Basque language has survived under these harsh circumstances."

Now fracking is emerging as the most recent enemy of our land: ninety-one percent of the territory of the Basque Autonomous Community (one of the three components of Basque Country) will be subjected to fracking for gas. Fracking meets strong opposition all over the world, as it has proved to be lethal for the environment. Why should we risk our future? We could take advantage of windmills, solar panels, biomass centrals, wave-energy centrals... Do we seriously want to "perforate the veins of our Mother Earth"? That was the motto of an anti-fracking NGO in Basque Country, and I feel it is a powerful call to awakening.

And here is the crux of the matter: many of these infrastructure developments will directly and indirectly affect the heartlands of the Basque language, so they will have detrimental influences on both the environment and the language. As in the Irish Gaeltacht towns where the Irish-speaking municipalities are protected by law, there is a similar initiative in Basque Country: the Federation of Basque-speaking Municipalities (UEMA). In order to become a member, over 70 percent of the population needs to have a solid knowledge of Basque. As in Ireland, generally these municipalities are small rural towns with little industry and a relatively strong capacity to integrate newcomers, due to both their linguistic and their cultural integrity. However, these heartlands are now getting weaker, as many of the newcomers are non-Basque-speaking people, looking just for relaxation and a green landscape.



In green you can see the itinerary of the High-Speed Train and how it will affect the Federation of Basque-speaking Municipalities (UEMA). Map: Beñat Garaio Mendizabal, 2015



This map shows the itinerary (in green) of the AP-1/AP-48 highway and how it will affect the UEMA municipalities. Map: Beñat Garaio Mendizabal, 2015

Notice the locations of fracking prospects (represented by squares) and how they will affect the UEMA municipalities (in green). Map: Beñat Garaio Mendizabal, 2015

Many social and cultural actors are concerned with this issue, and a number of scholars and professionals from different disciplines have created a working group called *Lurraldea eta Hizkuntza*, that is, "Territory and Language". This group's aim is to acknowledge that the future of Euskara depends not only on social, political, or linguistic factors, but also on economic, industrial, and urbanization factors. In a manner similar to what Wales and the Åland islands did, this group is lobbying for legislative change and proposing potential measures to stop the rampant, uncontrolled urbanization and the shift of the Basque language.

I study for a Master's degree in Language Support and Revitalisation at the School of Oriental and African Studies (SOAS) at the University of London. From Day 1, we were told that interdisciplinary collaboration is crucial in order to get things done. As I said earlier, linguistic and ecological diversity can be closely interlinked, and the combination of linguistic and "green" fights can be nothing other than beneficial. It is inspiring to see that in Basque Country feminist NGOs are allying with pro-Euskara causes, and vice versa, since the oppression of a language can be in some ways linked to the oppression to women. The key aspect here is EMPOWERMENT. It was encouraging that in 2012, when my city, Vitoria/Gasteiz, was named European Green Capital of the year, some scholars, especially sociologist Iñaki Martínez de Luna and linguist Albert Bastardas, tried to achieve the signing of a "Linguistic Ecology Declaration"—a document that would have stressed the importance of addressing both issues and the benefits of combining them.

Unfortunately, that effort did not go very far. But I would like to pick up that thread and continue insisting on the usefulness of this collaboration. Aside from any practical reasons, I must keep stressing the point simply because I believe in this diverse and rich world: this is the world I want to live in. But, as I have just said, this new joint fight could be really practical. In a region with a high political fragmentation and a covert linguistic conflict (Basque has been a strong identity marker for the mainly left-wing pro-independence inhabitants), both our land and our language need a stronger foundation to have a bright future.

Various organizations around Basque Country organize activities to raise awareness of and fundraise for the Basque language, such as non-competitive runs and festivals, which attract thousands of people. Photos: EITB (left); Tierra Estrella (right)

Lately, the strictly environmentalist movement (including some political parties such as the newly born Equo) has not been particularly favorable to the revitalization of the language, and some of the associations involved in "green" fights use Spanish (or French) as their vehicular language. On the other hand, the pro-independence left-wing EH Bildu coalition—the largest party trying to revitalize the language, or at least the largest party having an overt and brave pro-Basque language policy—has adopted in its manifesto some of the ideas from environmentalist NGOs, such as food sovereignty, local consumption, end of big infrastructure projects (including fracking and the High Speed Train), a sensible urbanization plan, a focus on renewable energy, and so forth. Moreover, the idea of writing this article came to me when I read, in the manifesto of Desazkundea, the de-growth collective of Basque Country (de-growth: we live in a finite world but are supposed to grow indefinitely, so we need to reverse that trend in order to live harmoniously on this planet), that since we were trying to go local, then the use and promotion of the Basque language was an obvious choice.

So why don't we try and take the language out of the political fight and offer it to those who are closer to us—that is, those who are sympathetic to the Basque language but do not want to question their national identity at this time? And at the same time, why don't we ignite the "green fighting" fire of language activists and become associated with a more general, stronger support group for diversity?

The mainstream parties won't go any farther in both their linguistic and ecological ideas until they are under pressure from society, so we'd better listen to that call and start putting our ideas into the political agendas of our friends, acquaintances, neighbors, and so on. The first steps are already made: the attempt to sign the Declaration, Desazkundea's proposal... We just need to start following the path.

The author would like to thank Caoife Garvey and Txetxu Garaio ("aitte") for their support and friendship. Urte askotarako!

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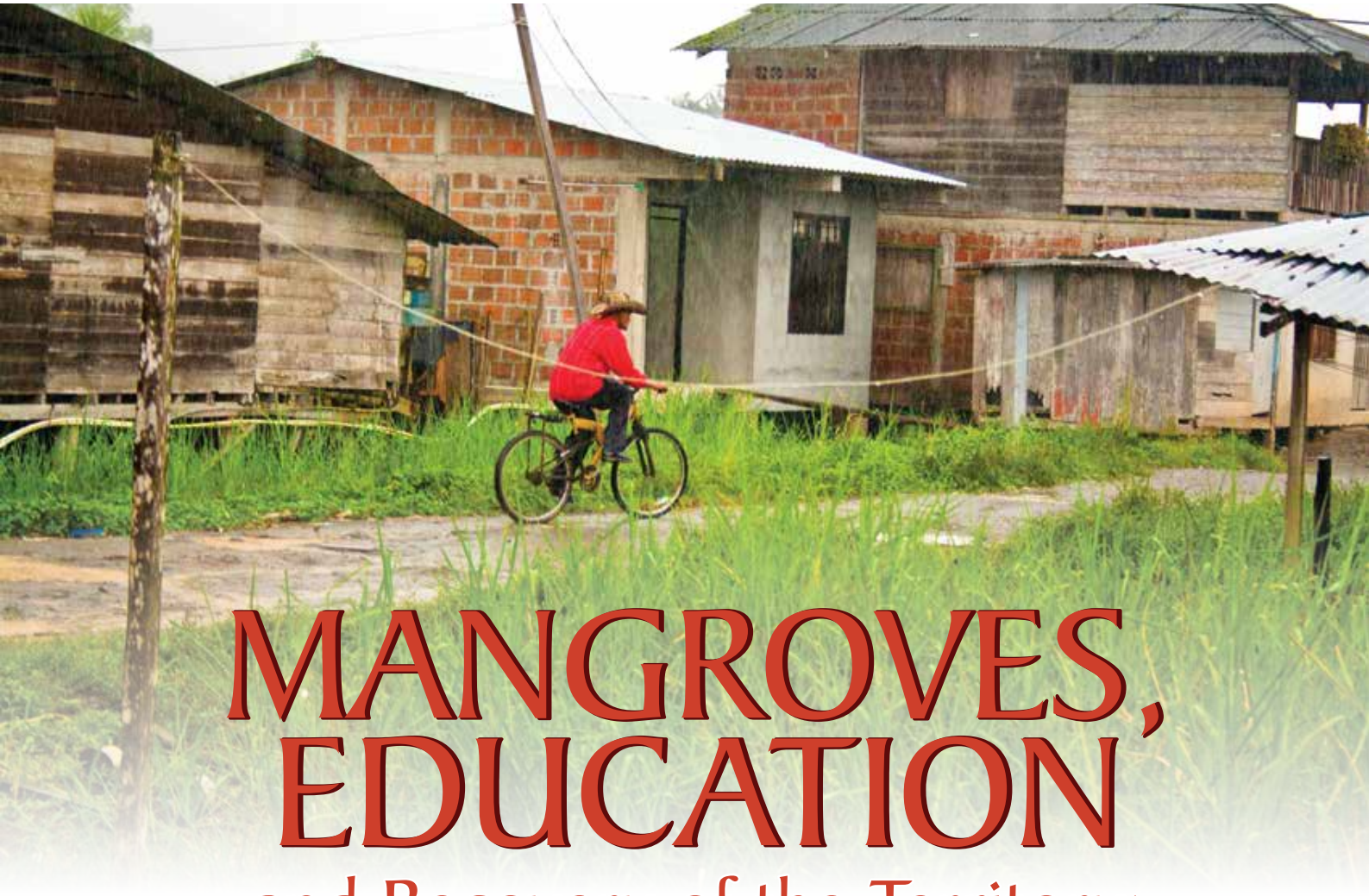

MANGROVES, EDUCATION and Recovery of the Territory:

Biocultural Diversity in Bahía Solano, Colombia

Text by Felipe Rodríguez Moreno
& Norma Constanza Castaño Cuéllar
Photos by Felipe Rodríguez Moreno

Bahía Solano is a municipality located in the Chocó District on the Pacific coast of Colombia, which over the past decades has undergone profound social and cultural transformations. A decree by the Colombian government created Bahía Solano as an agricultural colony in 1935. Under these circumstances, dozens of peasant families from around the country were brought in to settle and farm there. In addition, between the 1980s and the 1990s the area began to witness a new wave of migration of people from different parts of the country, who arrived in the municipality to establish a variety of commercial activities.

These changes now define the relationships with and modes of appropriation of the land by its current inhabitants. That makes Bahía Solano a cultural diversity space where the *mestizo*, black, and indigenous communities develop their distinct lifeways and establish different links and relations with local ecosystems, such as mangrove forests, the Pacific Ocean, and large tracts of rainforest.

1. (Above) Rain defines a great deal of the social relations that take place in the municipality of Bahía Solano. The area's geographical position produces meteorological variations owing to the change in air currents. This results in constant rainfall in the region, reaching an annual average of almost 5,000 mm. Photo: 2015

2. Tidal phenomena also mark the everyday life of the people of Bahía Solano. Fishing, travel by sea to other districts or municipalities of the Pacific region, and even household chores are influenced by tidal changes in seawater level. This photo shows several horses resting on the beach at Ciudad Mutis (the municipal seat), where at low tide the water retreats for hundreds of meters. Photo: 2015

3. Bahía Solano is a municipality with a strong fishing tradition. For more than two decades, the local fishermen have been developing an interesting organizational process to ensure the conservation of marine ecosystems and food sovereignty of the people of the Colombian Pacific, by means of the exclusive practice of artisanal fisheries throughout the municipality. In this photo, several boats are seen on the banks of the Jella River, an area that marks the departure and return of local fishermen to and from the vast waters of the Pacific Ocean. Photo: 2014

4. Fishing is not an exclusive activity of adults in the region. A number of children in Bahía Solano build knowledge about fishing on a daily basis, from experience of and a direct link to the territory—a circumstance apparent in this picture, in which a child from a local indigenous community is fishing in the vicinity of a mangrove strip in the Viejo Onetti neighborhood. Photo: 2015

5. As a result of population migration to the municipality through the past several decades, many people have established their homes in mangrove areas, causing severe environmental impacts. The problem is illustrated in this picture, taken in the area of Ciudad Mutis, which stands out as one of the sites with the highest rates of anthropogenic intervention. Photo: 2015

6. Another threat to the mangrove ecosystem is the high rate of deforestation of some mangrove species for various uses, particularly the use of major species such as the nato mangrove (Mora megitosperma) for timber, among others. Photo: 2015

7. Solid waste pollution is perhaps one of the most visible signs of anthropogenic intervention in mangrove forests. In this photo, a local student is seen fishing near the Chitré neighborhood's mangroves, which appear quite contaminated by solid waste. However, it is important to realize that the cause of the physical impacts on mangroves lies largely in the low level of sense of place among a large sector of the population—a phenomenon related to migration. Photo: 2015

8. The Luis López de Mesa Educational Institution has undertaken major educational efforts to ensure that both students and the community at large develop a sense of ownership of and belonging to the territory, as a main avenue to conservation of biocultural diversity in the region. The picture shows the Luis López de Mesa School after a rainy day. Photo: 2015

9. Among the key agents of the social transformation processes arising from the efforts of the Luis López de Mesa Educational Institution are the teacher Edgar Molina Maturana and several of his students, who are grouped in a research team that has chosen the name "Propágulos", from the seeds of the piñuelo mangrove (Pelliciera rhizophorae). In the photo, the teacher and one of his students are on a field trip surveying environmental conditions in other districts of the municipality of Bahía Solano. Photo: 2015

10. The National Pedagogical University of Colombia has been working with the community and the Educational Institution since 2013, contributing to the development of alternative curricula that promote community empowerment and a sense of ownership of the territory among students and the community. For this purpose, the two main building blocks are the teaching of biology in context and the affirmation of the society-school nexus. The photo portrays Hilary Villarreal and Albis Pinedo, students from the local research team, and Alexandra Arévalo, researcher and student at the National Pedagogical University. Photo: 2015

11. The progressive transformation of the curriculum is a notable result of the process of collaborative research between the Educational Institution and the National Pedagogical University, based on the local communities' and children's concepts, beliefs, practices, and relationships with nature. In the photo, one student from the research team is interviewing a local resident about their concepts of and practices around mangrove ecosystems. Photo: 2015

12. Educational initiatives in Bahía Solano have focused mainly on secondary students. However, it has become apparent that, in order to democratize knowledge, it is important to involve primary school students in researching and surveying the territory. Three children are seen in the picture observing the municipal seat of Bahía Solano from one of the highest points found in this region. Photo: 2014

13. The educational approach emphasizes that, to develop a sense of ownership of the territory and transform the individual and collective realities of students and community, it is necessary for students to begin to familiarize themselves with the territory they inhabit through teaching in context, field trips, and intercultural dialogues with different stakeholders in the municipality. In the photo, some of the Propágulos (research team participants) interview local people. Photo: 2015

14. Ultimately, the community plays a central role in promoting educational processes and the sense of ownership of the territory among Bahía Solano children. Efforts are underway to establish links between the school and the local families and social organizations, as a means toward the progressive reconstruction of the social fabric of this territory. In the picture, two children and an adult are seen on the way back from a canoe trip, carrying a bunch of bananas and catching some blue crabs locally known as jaibas. Photo: 2014

We wish to thank the people of Bahía Solano and the Luis López de Mesa Educational Institution for allowing us to work with them for social transformation and conservation of biocultural diversity in the municipality.

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Terralingua

UNITY IN BIOCULTURAL DIVERSITY

Terralingua *n* **1:** the languages of the Earth, the many voices of the world's diverse peoples. **2:** the language of the Earth, the voice of Mother Nature. **3:** an international non-governmental organization (NGO) that works to sustain the **biocultural diversity of life** – a precious heritage to be cherished, protected, and nurtured for generations to come. ¶ From Italian terra 'earth' and lingua 'language'

www.terralingua.org

Terralingua Ubuntu: a space for Terralingua members and friends to come together as a community, connect, and work together to sustain the biocultural diversity of life. ¶ From the word ***ubuntu*** in the isiXhosa and isiZulu languages of South Africa: **1.** humanity or personhood, achieved through interconnectedness with other people and community; **2.** an African philosophy of humanism, grounded in the notion that human identity and dignity arise out of respect, concern, compassion, generosity, and reciprocity toward others--family, neighbors, ancestors, community, and the human race at large.

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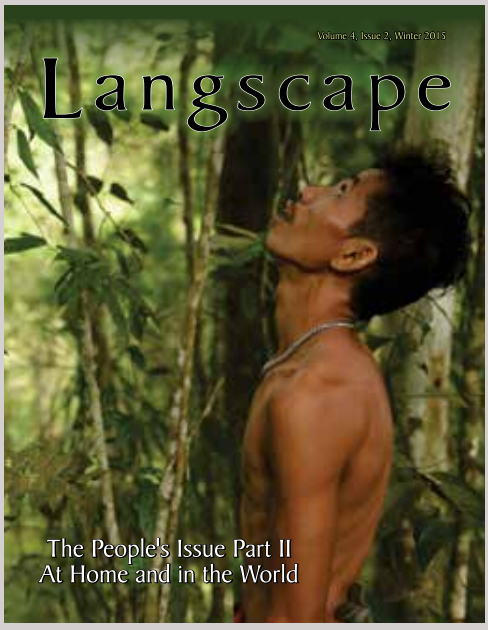

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"As people we are molded, hewn, carved by the landscapes we inhabit, we are part of the land, and there is no changing that. These places inform, educate and mirror who we are, whether in sickness or in health. That is why, when people lived in more land-based ways, the world had many more languages, more nuanced and diverse cultural traditions and land-specific ceremonies, and more hand-selected, propagated and expertly tended grasses, trees, seeds and food crops than we've got today. Pave the land, demolish the land, desecrate and poison and plunder the land, and perception is plundered as well. We need open land in order to learn how to see, know, and experience beauty. This is no superficial recreational need, but a need in the same way as we need home, food, clean water, and meaning. To say this more exactly: in the deepest sense, we are only as intelligent as we are in contact with living landscapes."

- Sonja Swift