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Hñähñu PhD by Soledad Lojd

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Editorial

Labor of love in the era of Covid-19

The co-director of Journalism to Raise Environmental Awareness, Miguel Angel Torres Guerrero (1956-2019), left us with the task of publishing at least one more issue of Meloncoyote. Fulfilling his last wish is the purpose of this edition, presented here as a labor of love.

Publication intersected with the worldwide outbreak of the novel viral disease Covid-19, a pandemic that led to closing the international border that links our Northwest Mexico region with the neighboring states of Arizona and California.

With all "non-essential" crossings thwarted indefinitely to minimize contagion, the outlook was uncertain for family reunions, tourism, agriculture, business, services, and environmental cooperation in the border area. With public schools temporarily closed to protect health, our March 2020 Meloncoyote workshop on bilingual citizen investigative journalism for resilience was postponed until further notice by the Colegio de Bachilleres III in Ciudad Obregón, Sonora.

Previously, at the 2019 editorial meeting, held in Mexico City in Noviembre, we discussed the changes in the mass communication industry over the 15-year period of the newsletter project. With the advent of social media and the age of access to information on the internet, the publication is no longer the sole outlet for sustainability coverage in our region. Yet its usefulness as a training tool for independent investigative journalism is as invaluable as ever, we concluded.

Members of the Mexican Environmental Journalists Network promised to contribute articles to the newsletter as a tribute to their late friend Miguel Angel, who was one of the founders of the national organization. However, like in previous years, the goodwill of volunteers ended up being bested by their other duties, putting the editorial staff on the spot and delaying the outcome.

The lack of grant funding for production expenses since 2015 compounded the challenges for the workshop and publication.

The upshot of this sequence of events is that Meloncoyote plans to publish only in connection with future workshops, to the effect that participants in training sessions will still have a guaranteed forum in which to disseminate their media products. Meanwhile, we will maintain our presence through social media posts @meloncoyote.

We are grateful to our talented, hardworking volunteers, as well as our past funders. We are proud of our record and look forward to more future successes for the conservation-minded current and future generations of the Northwest.

Mission

Why Melóncoyote?

Our project dates back to 1994, when "Journalism to Raise Environmental Awareness" (abbreviated PECE in Spanish) was formed. In 2004, PECE played a role in the founding of the national professional organization The Mexican Environmental Journalist's Network. In 2005, when we started the first grassroots journalism project in the Gulf of California, our team chose the name Melóncoyote because it is a species emblematic of the region at the heart of our mission.

The Coyote Melon, known in Spanish as melón coyote or calabacilla (which includes the species *Cucurbita palmata*, *C. cordata*, *C. digitata* and *C. foetidissima*) is a wild perennial gourd that is resistant, versatile, beautiful, useful and native to the sandy soils that characterize the Gulf of California zone. The coyote melon is

found in the region's seven states: Baja California Sur, Baja California, California, Arizona, Sonora, Sinaloa, and Nayarit. A vine, Coyote Melon has an immense root that guarantees its survival against hard times while its long stems serve to anchor the soil in fragile areas.

The indigenous peoples of the area, bearers of the region's traditional wisdom, describe the plant and how it is used. As medicine, it is bitter, but effective. As a musical instrument, it makes a beautiful rattle. Its seeds provide oil and a flour which contains a high level of protein. Its shell is ideal as a container for all matter of things. Because of all of these traits, and because it is an integral part of the food chain and one of the principal foods of the coyote, they named it "Coyote Melon".

Our team of collaborators chose this name because it is a plant found throughout the region, and in doing so, we wanted to stress our intention to create a large-scale communications medium, capable of spreading (on a regional level) the news about efforts being made towards sustainability. With this symbolic name to represent our work, we are sending a clear message about our respect for the land and the sea, as well as for the ancestral cultures and customs of the region. We see the establishment of this medium for education and dissemination as something urgent, given the idiosyncrasies of the region. We have conceived this project as being an integral element of the environment, something positive like the Coyote Melon.

Faced with the challenges of growth in the region—a low population density, its recent political incorporation into the national government, a high degree of natural attraction and its proximity to the strong investment sector of the United States—we understand the implications of the pressures for development. Dealing with these challenges and pressures will require informed citizens who have the chance to participate in the decisions that affect their land, water, air, biodiversity and their future. We invite others to join with us, to participate in building this medium and to fight for a stable future for the region.

All work on behalf of Melóncoyote is voluntary.

Posthumous tribute to Miguel Ángel Torres Guerrero

By Juana Meraz Sánchez *

On March 7, 2019, the heart of the Mexican Network of Environmental Journalists, Rempa (for its acronym in Spanish), suffered an unexpected loss when Miguel Ángel Torres Guerrero left this mortal coil, a fact deeply felt by his family and friends who will always remember him. Miguel Ángel was one of the founders of our network and a great human being. Within these lines, we recognize and give thanks to his passion for social struggle through environmental journalism, his unconditional work on the right to information access, and his open spirit that gave a voice to those who did not have one in other media outlets.

Graduate of UNAM in economics, pioneer of environmental journalism in Mexico, and promoter of community and independent media, his steady activism and his immense free and irreverent spirit were already evident from his early student days. Leaving the classroom behind, he went on to increasingly greater journalistic accomplishments.

With his editorial rigor and strict commitment to good writing, he worked in the editorial department of the National Institute of Statistics and Geography (INEGI) when the institute was the largest publishing house in Mexico. Among his later writings are articles in the Communist Tribune, the on-line publication of the Mexican Communist Movement (MCM); these works can be found in the book Politics, Environment and Society, published by MCM.

In 1988 he began his career as a correspondent for the newspaper El Financiero. His experience, together with his hallmark social commitment, was also apparent in his contributions as editor and co-director of Journalism to Raise Ecological Consciousness (PECE for its initials in Spanish), founded in 1994 with the support of the MacArthur Foundation. Similarly, he was committed to this news bulletin Melóncoyote, a project born of PECE, which disseminates information on the efforts towards sustainable development in the northwestern region of Mexico and, which to date, continues to be forged through volunteers who lead workshops in bilingual citizen journalism. His passion was not only writing, but also quality photography, explaining why almost all the images for PECE articles were his.

He continued with various social and environmental awareness projects and these led him to becoming one of the founding members of the Mexican Network of Environmental Journalists (Rempa), which today continues working with the same spirit that Miguel Ángel Torres Guerrero left as a legacy.

Among friends and colleagues he was known as Jaguar, a way to recognize his tenacity, agility, observation, authenticity, courage, strength and journalistic acumen in his published lines. Included in these is his unforgettable reporting on the Pacific Gray Whale, which at the time was being threatened by the proposed expansion of the salt works in Guerrero Negro. The bid to make it the largest producer in the world would have significantly affected Laguna San Ignacio, located in the Vizcaíno Biosphere Reserve in Baja California Sur. Miguel Ángel was there to record the struggle and accomplished what every good journalist seeks: to inform, form opinion, and dissent. His report attracted more journalists and international interest, to such a point that the project was finally canceled and the gray whales and their habitat were protected. Without doubt, this fight was a model for the organization of environmental defenders.

Miguel Ángel Torres wrote about various socio-environmental issues, addressed sustainability and gender equity, the fight against timber violence, the Mayan train, megaprojects in the southeast, the federal budget, mega-diverse seas, ancestral cultures, and traditional customs, as well as the people's right to their land, their biodiversity and a peaceful coexistence.

His human essence was more than apparent, above all when he put a great deal of effort into supporting victims in the street after the 1985 earthquake, when the collective activism of our day

began.

From his birth in Fresnillo de González Echeverría, Zacatecas on February 23, 1956, Miguel Ángel was already destined to write articles in defense of environmental and social rights. Perhaps this sensitivity was born of a childhood and youth spent in a large, humble family, a descendent of miners and small-scale chili and bean farmers.

Miguel Ángel Torres Guerrero stopped putting his journalistic pen to paper in Aguascalientes on March 7, 2019, but has left us an accumulation of works full of thoughtful pages, of indictment and challenges, all which reflect the way he always carried within him the blood of those who rebelled, of those who protested, and of those who think differently.

*Producer and radio broadcaster Autonomous University, Chapingo 1130 am and at radio.chapingo.mx

Miguel ... jaguar ... balam

By Eva Terán Fuentes*

Miguel ... jaguar ... balam§ ... yesterday earth, today wind.

Miguel ... Always jaguar ... Jaguar, today Sun God.

Miguel ... jaguar ... balam ... underworld and horizon. Your realms: day and night, you clinging to them to capture compelling images and create writings of infinite reflection ... always with your pen, your camera, your computer, your notes, and your beer at hand, day and night.

Miguel ... jaguar ... balam ... From your sacred cave of Rancho Viejo your provocative essence will prevail. Your Volvo, entwined in the roots of your urban mangrove, will have watched over your treasured legacies, returning them underground, to the earth, to the mesquite, to the wind, but, above all, to those who shared life with you and who learned so much from you.

Miguel, balam, photographic lens, eye of the jaguar. In your stealth and with your omnipresent camera, you captured countless places and scenes that tell a great story, our history. Warrior images, subversive, heartbreaking, loving, brotherly, moving.

Jaguar balam, your conversations delicious, fun, friendly, always interesting. Invaluable give-and-take that I treasure.

Jaguar, always jaguar. Vigilant, thoughtful, participative, principled. Social and misanthrope in an eternal debate. Lone ranger who always had our backs.

Balam, jaguar, Miguel. Powerful and humble, eccentric, completely a gentleman. Loving guide of new generations. Solitary, funny, very funny. Affectionate, unfaltering, caring, loving, respectful friend. Longtime friend, lifetime friend.

Your being ... important, spot-on, free.

Jaguar ... I crave your teachings. I miss your company. I insist on your integrity.

Jaguar, you are gone and you have not left. You are here profoundly, intensely, constantly. I imagine you at our side, like always. There with your inseparable camera. There, at the march, at the rally, at the protest, at the cantina ... there, always there, in stubborn search of a better world.

Jaguar, balam. Underworld, earth and wind. Powerful wind that overwhelms our senses. Pervasive wind that I breathe. There you are, my soul friend. There, in the wind that furtively blows against my face.

Balam, jaguar, Miguel. You just left and already I miss you deeply.

Miguel, balam, jaguar ... go forth in the wind and flow over our hearts.

And I hope that this jaguar balam will be my nahual^{††} and will accompany me like I accompanied him in unwavering friendship.

Miguel, balam, you illuminated our lives, my heart. Everlasting hugs, my beloved jaguar.

*PhD in history, Center for Research and Social Action "Jesuits for Peace"

§ a supernatural being in Mayan religion that guards cornfields and villages

†† a guardian animal spirit among Mesoamerican Indians.

That Miguel

By Leticia López*

Miguel Ángel Torres arrived in Aguascalientes in the late 1980s, after the major 1985 earthquake that struck his home of Mexico City in 1985, leading to one of the largest and most important government decentralization programs.

There we began one of the great stories of friendship and brotherhood with "Jaguar" and his many facets. For example, Miguel the boss, when I was his subordinate at INEGI. I remember his editorial rigor and his strict commitment to good writing, the knowledge that he shared with generosity and good humor, like when I tried to put that slippery and treacherous axolotl known as the comma in its place.

Another Miguel is the researcher, always ready to do field work to produce credible and incredible documents.

One more Miguel is the student, when we would travel every week in the 90s to the Federal District to take journalism and editorial design workshops, and where Carlos Monsiváis, Miguel Ángel Granados Chapa, Víctor Roura and many great journalists passed through our classrooms.

Yet another Miguel is the human rights defender who, without setting limits or seeking prestige, would show up for those organizations that needed him in order to make known the latest cause.

And the Miguel who actively participated with us in aguArdiente, with what started as a student project but which ended up piercing the classroom to reach a much broader journalistic audience.

What to say about bohemian Miguel, at times demonstrating inexcusable bravado, and at others being the life of the party with his unique humor and wit.

His friends do not waltz much, but we do share songs and beliefs. Here is part of one of our great anthems:

By Desiderio Macías Silva (Asientos, Aguascalientes, 1922-1995):

Fisherman, don't cry for me;
Take my oars in your hands.
Let the chrysanthemums raise their voices together:
In the flash of their bursting blossoms, let the lilacs open!
And to the rose so red it freezes sparks, a toast:
"Homeland or death. We shall overcome."

*Poet and editor, Department of Philosophy and Letters, National Autonomous University of Mexico



Two new books by Melóncoyote editors now available

By Talli Nauman*

In tribute to Miguel Ángel Torres Guerrero, co-founder of Journalism to Raise Environmental Awareness (*PECE*) and the Mexican Network of Environmental Journalists (*Rempa*), colleagues held posthumous presentations in October and November 2019 of his new books *Política*, *ambiente y sociedad* (Politics, Environment and Society) and *Periodismo Ambiental en América Latina y el Caribe: Botiquín de superación* (Environmental Journalism in Latin America and the Caribbean: Toolkit for Success).

In Mexico City at the *Centro Nacional de Comunicación Social A.C.* (*Cencos*), Marcos Leonel Posadas Segura, editor of *Ediciones del Movimiento*, pronounced the dedication to *Política*, ambiente y sociedad, a 450-page work produced by this publisher.

Posadas Segura pointed out that the volume is a compilation of Torres Guerrero's political analysis columns that had appeared weekly for the past three years in the magazine *Tribuna Comunista*.

At another book presentation in the city of Aguascalientes during the 100th anniversary celebration of the evolution of the Mexican communist movement, Marco Vinicio Saldaña Valero, colleague and political friend of both Torres Guerrero and Posadas Segura, announced that this is the first the books the publishing house hopes to print.

Financing and promoting the book, Daniel Carlos García Gómez, member of the editorial board in charge of its production, fulfilled a promise to his friend, the author, to publish the collection.

Rempa organized the presentation at *Cencos*, as well as another event at the Casa Refugio Citlaltépetl cultural center in Mexico City, honoring Torres Guerrero also for his role as editor in *Periodismo Ambiental en América Latina y el Caribe: Botiquín de superación*, authored by *Rempa* and *PECE* co-founder Talli Nauman.

The members of *Rempa* provided refreshments for both free events and were grateful to those who attended. They emphasized that this book goes beyond a simple manual on environmental news coverage.

"This handbook and practice guide is sponsored by the International Center for Journalists, headquartered in Washington, D.C. and was developed with contributions from professionals throughout Ibero-America," they announced.

A few quotes translated from its 34 pages:

Environmental journalism has a very important function: Since it provides daily coverage on predation of habitat; dispossession of lands; appropriation of water, soil, wind, seeds, the sun and all, as well as on the violence caused by extractivism, it reveals the cracks in the foundation of the current economic system, making way for improvements to come at some later stage.

Environmental journalists' task is to make known the perspectives of communities underserved in the mass media regarding solutions, alternatives and proposals to the problems the dominant development paradigm causes them.

In general, these proposals are culturally acceptable, socially agreed upon and economically viable—requirements that make possible the sustainability of the communities. That's why both a diagnosis of the problems and opportunities that concern us, as well as a discussion on the practices and methods that will lead to professional success, are of utmost importance.

This short book provides a long look at environmental journalism's history and its 21st Century challenges. Likewise, it offers up case studies as examples, highlighting the use of digital and geospatial tools. It spells out some of the best skills to hone and shares useful resources for those who are sincere about covering the beat.

It contrasts the increase in threats to journalists and nature, as well as to defenders of natural resources and land rights, with the uptick in promising trends for the field of environmental journalism in the hemisphere.

Specifically, it concludes, application of <u>the Regional Agreement on Access to Information</u>, <u>Public Participation and Justice in Environmental Matters in Latin America and the Caribbean (https://www.informea.org/en/node/452467/text)</u>, recently signed in Escazú, Costa Rica, will lead to guarantees of protection for the ranks in the profession, as well as promoting the profession.

*Director of Journalism to Raise Environmental Awareness

Environmental journalism, urgent journalism

By Agustín del Castillo*

[Extracts from "Information in Toxic Times" presented by the author at the University of Guadalajara, Sept. 2019]

In journalism's own little world, the label "environmental journalist" is often bestowed with some degree of contempt on those reporters who more or less specialize in human interest stories based on natural heritage, physical space, and environmental services in relationship to their fundamental connections with politics, society, culture, art and religion, as well as with that necessary evil—if any project ever is to be viable—the economy.

For me, this comes from a misunderstanding, since all journalism must somehow be environmental, given that the environment—the sum of the physical, biological, physiological and behavioral conditions of living beings and their ecosystems, and linked as it is to humans at the individual and societal levels—is the multifaceted source of everything we consider newsworthy.

The tale of the imbalances between all these components is, in essence, conflict. And conflict is the substance of journalism. It is no wonder that English humanist Thomas More coined the term "utopia", from the Greek terms for "no place" or "nowhere". So far every society in search of greatness has had to face dilemmas and had to decide between options, some of which could lead to true dead ends.

Given that premise, every journalist should tune into the environment; it provides context. It is, as a professor once said, half of the news. Or in other words, it is what allows for the whole story. That points us to reflect on an extraordinary reality: The field of opportunity that environmental journalism offers is enormous. This is due to issues such as climate change having become global crises. With them come the local crises and related issues. These include health problems, human and animal epidemics, loss of fertile land and food shortages, changes in rain patterns, impaired water resources, increasingly extreme hurricanes, and resulting economic damage, political strife, and cultural devastation.

There has never been a better time to recognize the value of "environmental journalism," which, if we are to define it in some way, is the act of delving into the great explanations about the failures and the impacts of our way of growing and reproducing, of creating wealth, of worshipping gods, and of cultivating leisure, those moments of laziness and idleness that seem to be the greatest desire of our democratic and relativistic societies.

But that impressive window of opportunity does not correspond to what the business managers of media outlets want covered. It is true that environmental issues unfold in the press. But in general terms, their publication demands great investment, that takes time, and don' always offer spectacle, so are sacrifices to the prevailing business model.

Journalism—that vital social tool used by democracies to uncover, interpret and denounce collusion and collision between private and public interests—does not have many guardians of its own accountability. Today's media gatekeepers do not see themselves as heirs of the time-honored responsibilities of the Fourth Estate. Only a minority of businesspeople accept that practically sacred trust. And one of the greatest news stories, the formidable and complex challenge of both the local and global environmental crisis is in dire need of dedicated professionals to cover it. Otherwise only a handful of historians will be left to witness how civilization ran aground in so many places. Or is that the gamble?

Group wins national prize for removal of 'phantom nets'

By Alan Alexis Valverde Amador*

SAN FELIPE

The highest honors awarded for Ecosystem Restoration at the first national competition "Sharing Experiences to Cultivate Ideas" went to the local non-profit organization *Pesca Alternativa de Baja California*, or *Pesca ABC*.

Promoted by the Ministry of Environment and Natural Resources through the National Commission for Protected Natural Areas, the award ceremony was held on Oct. 30, 2019.

Cognizant of current socio-environmental problems, the fishermen of *Pesca ABC* have decided to organize to defend natural resources, the commercial fisheries in the area, and the vaquita porpoise (*Phocoena sinus*).

This highly endangered porpoise on the brink of extinction is endemic to the Upper Gulf of California and only found here. It is the most threatened of 128 species of cetaceans, is the smallest on the planet, and has the most restricted distribution.

The collapse of the vaquita porpoise's population provoked the extension, as of this past March 5th, of a trade embargo on the importation of Mexican fish and seafood first imposed by the United States in 2018. In October, a committee from the Convention on International Trade in Endangered Species (CITES) will consider commercial sanctions against Mexico for not putting a halt to the illegal exportation of fish captured in gillnets that also results in the bycatch deaths of the marine mammals.

Since 2016, the members of *Pesca ABC* have engaged in activities geared towards preventing the mammal's demise, utilizing a fact-based and forward-thinking approach to address the serious socioeconomic repercussions to Mexico of such an environmental disaster, all with the hope of guaranteeing the future of fishing in the Upper Gulf of California.

Through dozens of meetings, *Pesca ABC* established concrete actions to be carried out in collaboration with governmental institutions such as the Agricultural and Rural Development Ministry and the Environmental and Natural Resources Ministry, as well as the Baja California state government and civil society organizations. Conservation-minded fishermen took on the task of removing 'phantom nets' within the designated vaquita porpoise refuge, an area completely closed to fishing activities.

Phantom nets are fishing gear lost at sea or illegal nets left on the sea floor for poaching purposes within the vaquita porpoise refuge.

The joint work required the boating skills and knowledge of local fishermen to develop the tools that are still in use to this day for the removal of phantom nets. Their combined and sustained efforts have paid off: 655 nets have been removed in four years.

The project's operation depends largely on limited resources from organizations and all three levels of government. Although this is a constraint, the fishermen have not given up on their conservation activities.

They have ample ongoing work, such as making "grampines," anchors attached to a line and dragged by boats in order to detect ghost nets on the seabed. They also remove remnants of damaged nets and other artifacts that harm marine species.

In the midst of the socio-environmental conflict resulting from the struggle over natural resources, these fishermen, previously labeled as "poachers", have shown their commitment and

willingness to protect the environment and save the area's fisheries, thereby helping to avoid the further degradation of our country's fishing industry.

*Undergraduate student in Aquaculture at the Autonomous University of Baja California and son of a founding fisherman of the port of San Felipe.



Battle against border brewery pops top on question of shared underground waters

By Kent Paterson*

MEXICALI

In Baja California's drought-stricken Mexicali Valley, farmers and other residents oppose the U.S.-owned Constellation Brands beer maker's construction of a massive export brewery, a facility that would use Mexican water to satisfy U.S. tastes. Constellation Brands is the producer of the Corona, Pacífico and Modelo beer brands sold on U.S. shelves.

Alfonso Cortez, researcher for the Colegio de la Frontera Norte in Mexicali, has calculated that a brewery the size of the proposed Constellation Brands facility could increase the water depletion rate of the Mexicali Aquifer from its current annual pace of 0.6-0.8 meters per year to 0.8-1.05 meters per year.

The long-running conflict has reached the ears of President Andrés Manuel López Obrador (AMLO); drawn a critical report on the Baja California state government-supported brewery project from Mexico's National Human Rights Commission (CNDH), which cited climate change as a consideration; touched Mexican courts; and most recently, inspired a controversial citizen consultation backed by the federal government to gauge citizen opinion on whether the planned billion-plus-dollar brewery should proceed or not.

Held in the Mexicali Valley against the backdrop of the COVID-19 pandemic outbreak, the March 21-22 citizen consultation produced nothing short of a political earthquake. According to Mexico's Interior Ministry, 27,973 voters (76.1 percent) said "no" to Constellation Brands, while 8,547 (23 percent) gave their approval.

At President López Obrador's March 23 press conference, Diana Alvarez, Interior Ministry undersecretary, said the results mean the National Water Commission will deny permits for the brewery.

Following Alvarez's statement, López Obrador elaborated on the Mexicali verdict, saying he was not against investment but that the popular will and environment must be considered. "It's not about growth for growth's sake, but growth with well-being and respect for the environment, because that is the inheritance we are going to leave future generations...," he stated.

The president also said he would reach out to business leaders in an effort to find a site for the brewery where more plentiful water supplies are available.

Mexico's Financial Executives Institute, as well as the powerful Business Coordinating Council, condemned the Mexicali consultation, contending the vote not only threatened jobs and investment but public health in a time of crisis.

The balloting ranked as one of the big news stories in Mexican media between March 21 and 23.

Alfonso Cortez, who has meticulously studied the brewery-water question and detected "dozens of irregularities" in the Constellation Brands project, noted the CNDH's recent report and recommendations that concluded the brewery threatened the local population's human right to water.

"The CNDH considers that one cannot act with a short-term vision," the autonomous federal agency said in a statement. The right to water prioritizes personal and domestic consumption, not private and industrial uses. Probably there will be water in Mexicali for beer production during the next 50 years, but at the cost of personal and domestic consumption...."

For Cortez, the fundamental issue at stake was an enterprise that would negatively impact already overexploited groundwater deposits and threaten further reduction of precious Colorado River

water.

"We can't risk the base resource of regional development to give it to a business whose profits are private and whose product goes to another country," Cortez said during a March 23 interview on AristeguiNoticias.

Underground water is underlying issue

The upheaval draws attention to a growing matter of vital importance: the future of aquifers along the U.S.-Mexico border. It begs the burning question of whether Mexico and the United States can find common ground on jointly managing a shared resource. Yet this critical issue remains glaringly absent as a priority on the binational agenda.

Unlike the shared waters of the Tijuana, Colorado and Rio Grande rivers, whose flows and apportionments are contingent on agreements between the U.S. and Mexico, the subterranean resources of the two nations are not subject to bilateral governance, with the exception of an agreement that covers a small section of the Sonora-Arizona border.

The sustainability of transboundary aquifers that are tapped by the two countries is an imperative to deal with boomtown levels of population growth, competing demands for precious water supplies, adverse climatic impacts on groundwater recharge, and mounting reports of aquifer depletion in different sections of the borderlands.

So, while Mexico City and Washington are fixated on Covid-19, immigration, drugs, security, trade and investment, an increasing awareness of the cross-border aquifer issue is developing among mid-level government officials, some elected representatives, scientific researchers and border residents.

After all, not only Mexicali, but also other border cities like Nogales in Sonora, Ciudad Juarez in Chihuahua, and Sunland Park in New Mexico, depend on transboundary aquifers for their water, while farmers on both sides of the international line utilize wells to water their crops, especially in times of drought.

Groundwater is at the core of several sharp conflicts in the border region. For instance, Texas and New Mexico are locked in a legal battle at the U.S. Supreme Court over Texas' contention that over pumping of groundwater in southern New Mexico's Mesilla Valley is affecting Texas' share of Rio Grande water, an issue that likewise touches on the water delivered to Mexico under a 1906 agreement.

In Chihuahua state, a copper mine a Canadian-owned company proposes for the fragile Samalayuca sand dune ecosystem, which includes a National Protected Area located about 30 miles southeast of Ciudad Juarez, has sparked public demonstrations, litigation and debates in state and local governments in recent months. Opponents in both Mexico and the United States contend the mine would diminish and contaminate groundwater that traverses the border with El Paso County, Texas.

Assessing the aquifer challenge

The U.S. and Mexican governments laid the groundwork for addressing transboundary aquifer issues in 1973 when the International Boundary and Water Commission (IBWC), approved Minute 242, which placed a limitation of 160,000 acre feet per year on groundwater pumping in the area of San Luis, Arizona, and San Luis Rio Colorado, Sonora. The binational agency tasked with managing U.S.-Mexico border water agreements also called for joint consultations, "with the objective of avoiding future problems," around any new developments or modifications that could impact the surface and groundwater resources in the neighboring nation.

A step forward in greater binational cooperation was realized in 2006, when the U.S. Congress passed the Transboundary Aquifer Assessment Act, a law sponsored by former U.S. Sen. Jeff Bingaman of New Mexico, which initially authorized funding of up to 10 years.

Resulting in the Transboundary Aquifer Assessment Program (TAAP), the measure backed research on two aquifers, the San Pedro in Sonora-Arizona and the Conejos Medanos or Mesilla

Basin in the Chihuahua-New Mexico-Texas sphere of influence. Parallel investigations of the same aquifers were launched by Mexican scientists.

Yet TAAP represents only the beginnings of a binational collaboration that will have to be greatly expanded if adequate attention is given to the transboundary aquifer question, according to experts.

First off, it's not entirely known how many cross-border aquifers exist and, precisely, which country is drawing the most water out of them.

In a 2019 email to this reporter, the U.S. section of the IBWC pegged the current number of known U.S.-Mexico transboundary aquifers at 36 but acknowledged that "we don't have an exact number of how many are transboundary," pending further research.

"There still isn't a certain answer, because the work of evaluating all the aquifers hasn't concluded, much less the manner in which groundwater moves and interacts with the different environmental components on both sides of the border," said Gonzalo Hatch Kuri, a National Autonomous University of Mexico (UNAM) researcher and the author of a seminal book on the shared groundwater resources of the Paso del Norte region of Ciudad Juarez, El Paso and Dona Ana County, New Mexico.

According to Hatch, researchers have so far focused on the geological formations or "the rock" of the aquifers underlying Mexico and the United States. Save for scattered nuggets of information, Hatch said no border wide quantification of groundwater supplies exists for the U.S.-Mexico frontier.

"There's a lot of information we just don't know about the characteristics of the aquifers, the water quality, how it's changing, how use on either side is affecting aquifer levels or aquifer quality," concurred Holly Brause, a research scientist at the New Mexico Water Resources Research Institute (NMWRRI). Based at New Mexico State University in Las Cruces. The institute takes part in the TAAP program.

"So when (U.S. and Mexican researchers) come together and start to exchange that kind of data it helps us to start to know what we do have there, what do we have to work with, because it's of great importance to urban centers and to agricultural activity, industrial activity on both sides of the border," she said.

Cross border gatherings

Two important events took place in the Paso del Norte within the past year, shedding additional light on the breadth and scope of the border groundwater question.

Sponsored by the IBWC, last spring's Binational Summit on Groundwater the U.S.-Mexico Border in El Paso attracted scores of water researchers and water managers from the United States, Mexico and even Canada.

Among the highlights were presentations that reported on the continued depletion of the shared Mexicali Valley and Imperial Valley aquifers, a binational collaboration on assessing geology and water resources in the San Diego-Tijuana area, the dropping water levels of the Santa Cruz Aquifer shared by the two Nogales, and a tour of the Kay Bailey Hutchison Desalination Plant operated by El Paso Water Utilities.

Beyond the technical talk, two important themes that reverberated at the summit were establishing the prerequisite of "trust" between potential partners and "stakeholder engagement" in addressing common aquifer concerns.

Stakeholders along the U.S.-Mexico border include indigenous peoples, irrigators, municipal water utilities, industrial enterprises and everyday citizens.

"The summit was undoubtedly historic because it was the first time both governments via the IBWC recognized the existence and importance of the issue," said Hatch. For the Mexican border water expert, nonetheless, the gathering also revealed an "enormous asymmetry" in the research funding and investigative reach between better-resourced U.S. universities involved in the TAAP

program such as the University of Arizona and New Mexico State University and their Mexican counterparts.

Hot on the heels of the El Paso summit, concerned parties convened in Las Cruces for the Two Nations U.S.-Mexico Border Water Summit staged by the NMWRRI and co-hosted by New Mexico State University, the University of Texas El Paso, and Texas A&M University. That event featured the participation of members of New Mexico's Congressional delegation, academics, the IBWC, water utility managers, and others.

"I think the value for the institute of those type of meetings is really forming relationships with people from across the border and having a chance to exchange data and exchange experiences and really getting to know what each other are working on both sides of the border, so we can continue collaboration or form new collaborative studies between the two sides of the border," Brause said.

"I think its pretty amazing how much people are really coming together and trying to work across national boundaries, work across state boundaries, reach across kind of the agricultural-environmental divide, so that's something I found very encouraging about our prospects going forward."

According to Brause, the NMWRRI has a mandate to complete its obligations under the TAAP program, as well as serve the different stakeholders of New Mexico groundwater resources, which encompass farmers, the Elephant Butte Irrigation District, urban entities like Las Cruces, residential consumers, and industrial users.

Building on the momentum of last year's Paso del Norte gatherings, NMRRI was involved in organizing another binational conference originally set for mid-April in Ciudad Juarez. However, the Covid-19 coronavirus made its ugly appearance and the meet was cancelled. Brause said organizers hope to reschedule the event for later this year.

From study to action?

Transitioning from study to action, however, is the million-dollar question hanging over the border groundwater issue. For Hatch, the fundamental question at stake is "Which country is extracting more water from the transboundary aquifers, and consequently, who will put more order toward the care and effective protection of an element as vulnerable as groundwater?"

As a way of moving the ball forward, he proposed establishing an aquifer conservation program between Mexico and the United States that "could be a focus that builds trust between the two countries."

Hatch further advocated an "early alert system" that would allow either nation to have "tools for controlling the extraction or irrational usage of border groundwater so as not to affect the neighboring country."

He stressed that the adverse consequences of unilateral decisions can be seen in the case of the U.S.-built All-American Canal bordering California and Baja California. Back in the early 2000s, controversy erupted after the U.S. government relined the canal, an action which impaired the recharge of a transboundary aquifer also used by Mexican farmers. According to Hatch, "This issue has not been resolved with success for Mexico."

Complicating any future binational agreements are the different water governance regimes in Mexico and the United States. In the former, the federal government via the National Water Commission holds power over the exploitation of groundwater resources, while in the latter, individual states have jurisdiction over aquifers. For groundwater advocates, this means navigating through and negotiating with various agencies and interests.

In Mexico, Hatch and his colleagues are reaching out to federal lawmakers and organized three forums last year in the Mexican Senate. At one forum, attendees heard about the "scientific manipulation" of official studies that indicated "an abundance of groundwater" in Saltillo, the capital of the northern border state of Coahuila. At another forum, a draft groundwater law promulgated by Hatch and friends received a cool reception from the head of the National Water Commission, according to the Mexican academic.

Although Sen. Salomon Jara (Morena-Oaxaca) has been actively engaged in raising the profile of the aquifer issue, Hatch maintained that most lawmakers still lack a "systemic vision" of the country's groundwater situation.

"In this sense, we believe it is necessary to continue producing more evidence and communications about this, so the importance of groundwater is more visible in Mexico. We hope to have a modification of (the proposed groundwater law) this year, with the goal of having a more robust document by the end of 2021," he said. A positive development toward consensus, Hatch added, are recent discussions also involving the UNAM Water Network and representatives of the Mexican Geohydrological Association and the Mexican chapter of the International Association of Hydrogeologists.

Given the knot of stakeholders and decision-making bodies in the United States and Mexico, as well as the varying physical characteristics of aquifers, cross border groundwater experts generally view the possibility of reaching a comprehensive binational accord along the lines of the standing river agreements a difficult proposition at best. Instead, talk increasingly revolves around the potential of achieving binational agreements on individual aquifers, somewhat like the Minute agreement system of the IBWC.

At last year's El Paso summit, Raul Morales of the Mexican Geohydrological Association proposed forming binational work groups focused on particular aquifers, composed of U.S. and Mexican water officials, NGOs, professional associations, and others. Joint management, he argued was the "only way" of guaranteeing the future of transboundary groundwater resources.

Integral management should also protect surface waters that may be connected to aquifers, Morales added.

Taking an example from another border region, the U.S. Geological Survey's Nicole Herman-Mercer spoke about the Yukon River Inter-Tribal Watershed Council of Canada and the United States. Comprised of members of 75 tribes, the Council has a long range goal of drinking water directly from the river like the ancestors did; trains citizen scientists; engages in bi-weekly water sampling; and conducts community based-water quality monitoring using a modified U.S. Geological Survey protocol, Herman-Mercer reported.

Citizen participation is also a central concern for the University of Arizona's Jacob Petersen-Perlman, a TAAP collaborator who's also been active on stakeholder engagement in southern Arizona. Echoing Herman-Mercer's contention that citizen participation is citizen power, Peterson-Perlman said, "Environmental decision-making is increasingly seen as a democratic right."

This story is dedicated to the memory of my dear friend, Miguel Angel Torres Guerrero, who always unraveled the threads of the border's fabric to expose the transcendent issues of our day.

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*Author of The Hot Empire of Chile and independent correspondent

Tohono O'odham claim Trump's border wall erection violates sacred spots, rights

By Talli Nauman*

SELLS

Federal agencies have failed to hold required consultations with the Tohono O'odham Nation about destruction being caused by the building of the U.S.- Mexico border wall, Tribal Chair Ned Norris, Jr. testified Feb. 26 before the U.S. House of Representatives Subcommittee on Indigenous Peoples of the United States.

The wall builders have bulldozed or blasted religious and cultural sites of great significance to the Tohono O'odham, he said.

"Dynamiting these sacred sites and burial grounds is the same as bulldozing Arlington National Cemetery or any other cemetery," Norris said. "Our history as a people is being obliterated and our ancestors' remains are being desecrated."

He pled for Congress to "act to restrict or remove the Department of Homeland Security's dangerously broad authority to waive cultural preservation laws and compel them to consult with tribes on these issues. Preserving these sites is important not only to the O'odham, but to the history and culture of the United States," he said.

The Tohono O'odham Nation is a federally recognized tribe with more than 34,000 enrolled tribal citizens. Its traditional lands range from what is now central and southern Arizona to the Sea of Cortez in Sonora, Mexico. The nation's current reservation includes 62 miles of international border, and it has been on the front lines of border policy since 1854.

Border wall construction at culturally important areas such as Quitobaquito Springs and Monument Hill has destroyed sacred sites, burial grounds, and other areas of significance to the nation.

The National Parks Service has acknowledged that these areas are sacred to the O'odham. Yet the Department of Homeland Security has been allowed to ignore cultural preservation and environmental laws.

Despite the tribe's repeated requests for meaningful consultations about impacts of the wall construction and Homeland Security promises to hold them, as legally required, no such conversations have transpired, the tribal government claims.

On Feb. 27, the National Congress of American Indians (NCAI) also condemned the recent activity in southeastern Arizona that led to the desecration of culturally significant sites, which includes blasting of iconic saguaro cactus protected at <u>Organ Pipe Cactus National Monument (https://www.nps.gov/orpi/learn/nature/biosphere.htm)</u>.

The monument is a U.N. International Biosphere Reserve, one of 325 worldwide intended to test and outline how humans can strike a balance among apparently conflicting issues of conserving biological diversity, promoting economic and social development, and maintaining associated cultural values, according to the National Park Service.

"NCAI believes the Administration's blanket waiver of cultural protection and environmental laws, which statutorily recognize the treaty and trust responsibilities the United States owes to Indian country, is permanently damaging culturally sensitive sacred sites, and serves as a threat to the respect for tribal sovereignty," the organization said in a written statement.

The statement pinned the blame on U.S. President Donald Trump, whose Administration suspended at least 41 laws to build the wall between the United States and Mexico.

"The President's actions and policies signal to Indian country a complete failure to sufficiently understand our American Indian and Alaska Native communities, and what it means to honor the trust responsibility owed to Indian country," said NCAI CEO Kevin J. Allis. "The desecration of these sacred sites on tribal lands along the U.S. Southern Border is shameful and must stop immediately."

NCAI opposes the construction of the border wall on tribal lands without the consent of the affected tribal nations and calls on the Administration to immediately cease further activity and engage directly with the Tohono O'odham Nation.

Construction of the wall adds insult to injury for the citizens of the sovereign indigenous tribe. From the early 18th Century to the present, O'odham land has been occupied by foreign governments, it says.

In 1853, through the Gadsden Purchase, or Treaty of La Mesilla, O'odham territory was divided almost in half, between the United States and Mexico.

The treaty bound the United States to honor all land rights of the area held by Mexican citizens, which included the O'odham, who were supposed to have the same constitutional rights as any other United States citizen.

However, the demand for land for settlement escalated with the development of mining and the transcontinental railroad. That demand resulted in the loss of O'odham jurisdiction in areas on both sides of the border.

What's more, the U.S.-Mexico border has become "an artificial barrier to the freedom of the Tohono O'odham... to traverse their lands, impairing their ability to collect foods and materials needed to sustain their culture and to visit family members and traditional sacred sites," its government sustains.

O'odham members must produce passports and border identification cards to enter into the United States if they are leaving the part of their land south of the border.

They say that "on countless occasions, the U.S. Border Patrol has detained and deported members of the Tohono O'odham Nation who were simply traveling through their own traditional lands, practicing migratory traditions essential to their religion, economy and culture. Similarly, on many occasions U.S. Customs have prevented Tohono O'odham from transporting raw materials and goods essential for their spirituality, economy and traditional culture. Border officials are also reported to have confiscated cultural and religious items, such as feathers of common birds, pine leaves or sweet grass."

The division of O'odham lands "has resulted in an artificial division of O'odham society,' they say. O'odham bands are now broken up into four federally recognized tribes: the Tohono O'odham Nation, the Gila River Indian Community, the Ak-Chin Indian Community and the Salt River (Pima Maricopa) Indian community.

Another band, the Hia-C'ed O'odham, is not federally recognized, while its members reside throughout southwestern Arizona. All of the groups still speak the O'odham language, which derives from the Uto-Aztecan language group, although each group has varying dialects.

The non-profit National Parks Conservation Association sent a strong message of support for Chair Norris' statement with a letter to Congress the same day as his presentation. It states:

"Organ Pipe Cactus National Monument was created in 1937 to protect its namesake plant and a scenic, biologically rich portion of the Sonoran Desert. However, the park also plays an important role in protecting, preserving and interpreting archaeological sites dating back approximately 1,600 years. The recent and ongoing destruction of park lands – including traditional homelands and burial sites held sacred by the Tohono O'odham Nation – not only undermines the National Park Service's preservation mandate under the Organic Act of 1916, it calls into question whose history matters.

"On May 7, 2019, Customs and Border Protection (CBP) announced a plan to build a 30-foot bollard wall along the majority of Organ Pipe Cactus National Monument's 30-mile border and 15 miles of neighboring Cabeza Prieta National Wildlife Refuge, as well as a segment of the border in Coronado National Memorial, replacing primarily existing vehicular barriers.

"While CBP opened a comment period that ran until July 5, the Department of Homeland Security waived 41 environmental laws covering the project areas on May 15 and contracts were awarded on May 16. It's clear that the comment period was just window dressing, not intended to have any significant impact on the construction plan.

"In providing an additional \$1.4 billion in border wall funding and no restrictions on the use of Defense Department funds, the FY2020 appropriations bills not only allowed more projects to move forward, it effectively provided a stamp of approval for the projects at Organ Pipe, Coronado, and other public lands along the border. And now we're seeing the consequences of that decision," the National Parks Conservation Association lamented.

In February 2017, one month after Trump issued Executive Order 13767 to build the border wall, the Inter Tribal Association of Arizona ratified a resolution on behalf of 21 native nations opposing the construction and the associated waivers of federal and other laws protecting Indian lands.

In addition to illegally destroying cultural and religious properties, the barrier prevents wildlife migrations "essential for survival and general life, health and existence," it says.

The project is bound to "injure endangered species such as the jaguar and other wildlife sacred to the tribes," as well as devastating countless saguaro cactus and other culturally significant plants, the organization stated.

The Sierra Club and the Center for Biological Diversity also lodged strong objections to the wall construction, citing dire implications for migratory wildlife species.

**Director of Journalism to Raise Environmental Awareness

Politicians diss Hermosillo Biological Corridor plan

By María O'Leary Franco* Photos by Sofia Vargas

HERMOSILLO

March 21, 2020—the beginning of spring and International Forest Day—marked the indefinite postponement of scheduled activities by the citizens collective behind the proposed Hermosillo Biological Corridor.

The postponement was necessary to comply with restrictions imposed by health authorities to protect residents in response to the Covid-19 outbreak. Event organizers saw in the pandemic yet one more reason for their struggle to reintegrate into the public sphere water and green spaces that are so scarce in this desert city.

The leaders of the initiative stated:

"Razing forests just to line pockets opens the door to increased risks for disease spread. The incursion of humans into nature becomes a boomerang that rebounds on global health. According to initial reports, the expansion of Covid-19 is due to the process of zoonosis that, far from having its origin in the exotic species markets, instead begins with deforestation and infrastructure projects in forested territories. This is the first step for animals practically unknown to humans to move closer to us.

An estimated 1.7 million as of yet undiscovered viruses are hidden in the remotest areas of the planet, revealing the extent to which altering natural spaces at the whim of the economy—be it deforestation or trafficking in exotic species—can increase risks of a pandemic like the current one.

Hermosillo is an example of a failed model and we need another one. Sustainability based on the economy and not on nature is not sustainability; it is simply the way to justify the alteration of habitat on behalf of companies that will make it profitable for business, not for the restoration of the habitat to its natural state.

Humans can no longer continue destroying our wetlands, displacing water, polluting the air, erecting more buildings, and thinking only of the typical economic incentives for attracting money and investment.

"Finally, in light of the Covid-19 pandemic, we know that there are certain risk factors such as high blood pressure, diabetes, and obesity. One way to prevent or cure these conditions is to be physically active. Not everyone can afford a gym, so public green spaces like those that politicians now intend to auction off are essential for health," they added.

The pronouncement corresponds to the most recent wave of resistance against the privatization of public parks and recreational areas in Hermosillo, a city with a population of almost 1 million.

In May 2019 teachers from the University of Sonora, environmentalists and representatives of civil society against privatization began to organize weekly to design the Hermosillo Biological Corridor. The citizens project aims to protect free access to the natural heritage of the city and make it "more livable", they said.

By September, architects had a master plan, in which they hoped to have volunteers plant up to 60,000 trees in parks and sidewalks. The plan was widely accepted when they presented it in a forum at the University of Sonora (Unison). It contrasted greatly with a proposed project in the city center to cover streets with plastic or banners shaped like flowers.

Joel Montoya Haro, Unison professor and corridor proponent, explained the reason for having a route that would link several kilometers of green areas extending from the university to Los Naranjos, then from there to old La Sauceda Recreational Park, and finally continuing on to connect government areas, the city center, outlying neighborhoods and the new Río Sonora Ecopark.

They announced that October 26 would be the symbolic launch date of the project. However, two days later the Governor's office published a decree in the Official Gazette, forming a trust to dismember La Sauceda Recreational Park.

In addition to Gov. Claudia Artemis Pavlovich Arellano's proposal to privatize a state-owned property portion, Hermosillo Mayor Célida Teresa López Cárdenas plans to sell a municipal sports area located a block away. The city council already has authorized the auction.

An important wetland ecosystem—the oasis that gave birth to Hermosillo—is on the chopping block because construction land sales are a well-documented way that Sonoran politicians award their faithful supporters.

"That they continue to repeat what previous governments have done is the final straw," remarks Blanca Coto, another proponent of the corridor.

The collective presented the design to the state legislature in mid-March and later met with the mayor.

Despite her solidarity with Mujeres Unidas Morena, the party movement that brought the current municipal government to power—López Cárdenas insisted on auctioning off a section of the La Sauceda estate known as El Cárcamo.

The rushed sale of the 25 acre site was authorized without prior public consultation during a closed-door session of the city council on March 28.

Council members argued that the money from the sale was needed to finance pothole repair in parking areas and on city streets, as well as for the coronavirus response.

The park's proponents lost little time, heading outside to set up protest tents on the street.

"It is very worrying that in the face of institutional harassment and in the midst of a deadly situation, the Célida López government is so insensitive to the citizen's request to stop an unusually hasty and clearly rigged auction," Montoya said.

They uploaded their petition "*La Sauceda no se vende*" (La Sauceda is not for sale) to Change.org, and by May 2 had garnered more than 34,000 signatures.

Meanwhile, from within the ranks of at least 50 citizens groups in Hermosillo, tree planting in parks across the city can best be described as an outbreak in itself.

*Recipient of the Hermosillo OSC 2018 Human Rights Defender award

Defenders of public lands succeed in restoring urban green space

By Isabel Dorado Auz*

HERMOSILLO

It took us 26 Saturdays, but we did it: We restored Villa de Seris Park, and on Sunday, Feb. 23, we celebrated the Citizen's Grand Reopening of this symbolic space.

Our usual bunch got together, along with a good number of people invited through social networks. It was a wonderful day because we were able to reconnect with other people involved in their own conservation efforts across the city. They showed up to congratulate us on our work and to invite us to create synergies that will allow us all to hand down a more livable Hermosillo to coming generations.

We wish to thank Martín Matrecitos and María Dolores del Río, who were the only state representatives to make an appearance, although all 33 members of the State's Legislature were invited. Likewise, Carlos León deserves a shout out as the only Hermosillo City Councilman of the 21 invited who joined us at the event.

While the majority of politicians turned a blind eye, it was a true grassroots celebration. We were especially moved by one woman's participation. She invited us to continue planting trees, something she has been doing all her life, and told us that in spite of still recuperating from three recent strokes, she wanted to be a part of the festivities. She also had a message of commitment to deliver to our capital city when she offered the fruit trees she had for us to plant.

Another participant, Lourdes Moreno, spoke out to ask for our solidarity with a group of neighbors who for months have been trying to turn a vacant lot located in front of the ISSSTE hospital into a green area. Eva Calderón, staunch defender of Parque Madero, also addressed the gathering and acknowledged our work.

She participated in the takeover of the location by holding a yoga practice that complemented the other activities taking place there, including cell-phone free games for kids.

There was excellent media coverage, complete with live web links allowing many to follow the ceremony step by step, in real time.

We wish to thank the following media outlets for providing the majority of the coverage for the various stages of the park's restoration: César Fraijo and *Diario del Yaqui*; *El Periódico Expreso*; *Proyecto Puente*, *Radio Pólitica y Rock and Roll*; and *Libera Radio*.

Honorable mentions go to *TV Azteca*, *Televisa*, *El Imparcial*, and *Uniradio Noticias* for a number of broadcasts and publicity of specific activities, as well as to all the media outlets that publicized the efforts of the *Cuidadania Activa* collective at this latest event or during our years of struggle to make our city sustainable.

This feat was made possible by a growing wave of citizen participation in our capital of those seeking to reach out to decision makers to share ideas and find solutions to the tragedy we are experiencing.

The persistent lack of sufficient public spaces for healthy recreation for Hermosillo residents must be addressed, both during and after the current Covid-19 pandemic.

In addition to what remains to be done at the Villa de Seris Park, there are many issues that we would like to address. We urgently need to further discuss with the government the conservation of important public spaces such as La Sauceda recreational area, and the Héctor Espino Stadium, as well as the creation of green areas in these places to provide the lungs our city needs.

More than a year ago, we made a written request for a meeting with Hermosillo Mayor Célida Teresa López Cárdenas, in order to discuss possible solutions to the problem. She publicly promised to meet with us, but didn't do so until after obtaining a resolution to auction them.

We want to urge her not to sell any more green spaces and to tell her we do not want a repeat of what happened in the original Villa de Seris Park, where more than 600 trees were killed.

We want her to know that we have planted more than 100 trees in the park, and all they need is tending. Furthermore, in La Sauceda's recreational area, on municipal property where the private concession expired, we are beginning rehabilitation, having removed the buffel grass in more than 70 percent of the parking area, all in compliance with the current health measures established as a result of the pandemic.

We want to tell her that betting on the environment can be profitable economically, especially if our idea for a biological corridor is adopted which would entail the planting of 14,000 to 20,000 trees along the bed of the Río Sonora between La Sauceda and the Ecopark.

We want to say that she doesn't need to look for resources to rehabilitate these public spaces because she already has an even more important resource right now, human power. We can tell her that more than 30 environmental groups already have done restoration work in the last year, and that for us the revitalized public spaces will be very beneficial.

We want her to know that these new green areas will combat the effects of increasing environmental pollution and, at the same time, will serve to reweave the social fabric, giving Hermosillo families the opportunity to enjoy places where they can meet outdoors under the shade of many trees.

There is much that can be done collaboratively between civil society and government, and so we have been knocking on doors with our proposals. Citizen pressure is getting stronger. We hope that politicians understand this and support rather than hinder the public interest.

*Social activist and university professor

Women of El Recreo, sea turtles' best friends

By Raquel Zapien*

EL RECREO

The women of this outlying community of Mazatlán have become steadfast sea turtle allies, providing hands-on conservation for the endangered olive ridley species and for the environment at nearby El Verde Camacho Beach, one of the most important nesting sanctuaries in Sinaloa.

During the July-November peak season for nesting activities, the women head to the sanctuary, located in Mazatlán's Marmol de Salcido district, to collect eggs for nest relocation, clean out old nests, record egg hatchings, and liberate hatchlings. Their husbands and other men are on duty from dusk to dawn, patrolling the coastal strip within the wildlife refuge.

The work never ends. Once the turtle nesting season has wound down, the women shift their focus to beach cleanup and maintenance.

For the past decade, they have been working with "*El Verde*" Sea Turtle Research and Conservation Center, which currently reports to the Northwest and Upper Gulf of California regional branch headquarters of the National Commission for Protected Natural Areas (Conanp).

Community participation has been evolving. These women and other members of El Recreo community have seen that supporting conservation generates environmental, social and economic benefits. So, in 2013 they formed a cooperative to provide ecotourism services that include beach visits, turtle hatchling releases, walks within the mangroves, bird watching, and other water activities.

Forty five year precedent

Scientists Raquel Briseño Dueñas and Daniel Ríos Olmeda began the first research and monitoring actions in the area in 1975.

On Oct. 29, 1986, El Verde Camacho Beach

(http://www.conanp.gob.mx/conanp/dominios/especies/tortugas/sitio/verde_camacho.php) was declared a reserve and refuge site for the protection, conservation, re-population, development and control of several sea turtle species.

The decree set forth a framework for implementation of conservation programs and the operation of sea turtle camps to protect females, eggs, nests and hatchlings, in addition to carrying out scientific research and monitoring activities during the nesting season. This led to the officially sanctioned sea turtle camp, established by Ríos Olmeda, a marine biologist and now coordinator of the project.

Later, on July 16, 2002, a decree published in the Official Gazette of the Federation recognized the beach as a protected natural area (ANP), classified as a "sanctuary".

Starting in 2012, El Verde Camacho Beach Sanctuary

(http://www.conanp.gob.mx/conanp/dominios/especies/tortugas/sitio/verde_camacho.php) obtained a Clean Beach (https://www.gob.mx/semarnat/acciones-y-programas/nmx-120-playa-limpia-sustentable) certification within the category of "conservation priority use" after meeting the requirements of Mexican standard NMX-AA-120-SCFI-2016, which establishes the sustainability specifications for beaches.

The certified section is 15.5 miles long and comprises 31 percent of the coastal strand in the municipality of Mazatlán. In the last seven years, the beach has enjoyed uninterrupted annual recertification, thanks to community organization and participation in periodic beach clean-ups.

Ramsar site strengthens protection

On Feb. 2, 2004, El Verde Camacho was recognized as <u>Ramsar (https://rsis.ramsar.org/about?language=en)</u> site No. 1,349 and placed on the list of the world's most important wetlands. According to the Ramsar Sites <u>technical sheet</u>

(https://rsis.ramsar.org/RISapp/files/RISrep/MX1349RIS.pdf?language=en), it encompasses an area of 15,948 acres.

The application for inclusion was made a year earlier by researcher Briseño Dueñas, head of the Sea Turtle Information Bank for the Marine Sciences and Limnology Institute at the National Autonomous University of Mexico's Mazatlán campus.

Countries that have Ramsar sites are committed to strengthening the conservation of wetlands, coastal habitats, and the species inhabiting them, such as sea turtles, which are threatened worldwide due to poaching, habitat loss, contamination, and over-exploitation.

In this context, the active participation of communities in conservation programs is noteworthy.

Community members join hands

Ríos relates that the collaboration of the residents has taken place gradually; first, through temporary employment programs (PET) for cleaning beaches or through community brigades and productive projects promoted by Conanp.

Later on, even after budget cuts, people continued to do the work without financial compensation.

Susana Tirado Luna registered with the PET at the invitation of her aunt, Gabriela Díaz, who always encouraged the community to participate and supported the efforts for the original certification of the beach.

After the death of her aunt, Tirado Luna assumed leadership and recruited more people. Ten women now come regularly to the camp to help during the peak nesting season. During this five-month period, an average of 2,200 to 2,500 nests are rescued (relocated and protected), depending on the weather.

"It is like giving birth. We are giving life to a defenseless animal," she says, while recording the daily hatchings in the log. Sitting in the sand, her companions extract the hatchlings from the nests, count them, and separate out the eggs that never hatched.

Mothers, daughters, aunts, grandmothers—all help in the work of the camp, under the supervision of operations technician Julio César González Palacios.

When financial resources are available, the women earn 100 pesos a day (about US \$5) for shifts that start at seven in the morning and last until three in the afternoon. When the money ends, the work does not, although this means they will not be paid for their labor.

Saving sea turtles and maintaining Clean Beach certification is now a personal commitment, the women remark as they go about their tasks inside a nursery.

"In conservation work women participate more than men and their influence is clearly evident. Today they are the ones carrying the baton," González Palacios acknowledges.

Tourist cooperative unfolds

Tourist attractions at El Verde Camacho include wide beaches that still have their dunes, something rarely seen in large tourist developments.

Long stretches of sand border mangroves that can be traversed by boat or kayak. Along some stretches, the branches of these aquatic trees intertwine with each other to form tunnels leading to open waters where it is possible to watch fish and even some crocodiles that are used to human presence.

Moving through these waters, it is possible to observe herons and other birds resting or feeding; green and blue dominate the landscape.

When turtle nesting season arrives, visitors can release hatchlings and learn about the camp's conservation activities, which include: monitoring of turtle nesting, nest relocations and incubation of nests, and environmental talks for students from nearby towns and various educational institutions.

The tourist activities are offered for small groups of five to 10 people who are guided by members of El Verde Camacho Rural Cooperative Service, which is made up of six women and eight men from the community, under the coordination of Efraín Ramírez Tirado.

Before venturing into ecotourism as a livelihood, Tirado Luna comments, the service members were trained in administration, organization and conflict resolution. Biologist Ríos helped them obtain the necessary resources to do so from the Conservation Program for Sustainable Development at Conanp. Training included a first aid workshop.

"We offer courses on everything so that there is no envy or any quarrels; we all agree on what we do; we have learned different skills," Tirado notes.

Ecotourism services are regularly offered once or twice a week throughout the year, but especially from October to February, during the peak tourist season.

Beach showcases biodiversity

El Verde Camacho Beach Sanctuary is a narrow coastal swath with an approximate area of 6,454 hectares (15,948 acres), which include estuaries, lagoons and rivers, according to Conanp. The wetland is fed by the seasonal flow of the 60-mile-long Quelite River.

The turtle camp located here

(https://rsis.ramsar.org/RISapp/files/31543838/pictures/MX1349map2004.pdf) has an incubation area and a nursery, a covered corral for the clutches that have been relocated, as well as an area to provide environmental education to students, community groups and other visitors.

Camp technician González notes that the monitoring tasks are carried out along more than 11 miles of beach.

According to the Ramsar <u>fact sheet (https://rsis.ramsar.org/RISapp/files/RISrep/MX1349RIS.pdf? language=en)</u>, El Verde Camacho is an index beach for the olive ridley turtle, (*Lepidochelys olivácea*), which means that it is important for monitoring nesting levels of this endangered species in Mexico, and the changes in its abundance.

It is also a feeding zone and migratory corridor for the hawksbill turtle (*Eretmochelys imbricata*) and the black turtle (*Chelonia agassizi*). The leatherback turtle (*Dermochelys coriácea*) nests here sporadically. All of these are listed as endangered in NOM-059-SEMARNAT-2010.

The area's wetlands are used as feeding, breeding, and nursery grounds as well as for refuge by a wide variety of other species, among these both resident and migratory birds, reptiles, and land mammals. According to Conanp, the wetlands also see high levels of migration of commercially valuable marine organisms, including a variety of fish species, lobster, shrimp, octopus and oyster.

Problems persist

As documented in the Ramsar Site registry, despite its biological importance, the turtle sanctuary is affected by pollution from both livestock and fish farming, vehicular traffic within the beach areas, construction, and artificial lighting.

Additionally, the location of El Verde Camacho is incorrectly recorded in the decrees that protect the area, which identify the sanctuary as being within the jurisdiction of both the Escuinapa and Rosario municipalities, rather than Mazatlán.

Conanp has requested that the area be re-surveyed using precise territorial georeferencing instruments and that the declared boundaries be modified accordingly.

Participants glean rewards

The last turtles arrived to lay their eggs on the beaches of El Verde Camacho in February, their numbers low because the peak of the season (July to November) was long past.

In March, work started on beach cleanup in order to begin the annual process of recertification that is granted by the Mexican Institute for Standardization and Certification. The women involved are: Gabriela Aguilar, María Cristina Tirado, Casilda García Carrasco, Magaly Tirado Ramírez, Victoria Tirado, Norma Alicia Juárez, Claudia Raquel García, María Félix Escobar, María Auxiliadora Alvarado and Susana Tirado Luna. Also involved are Efraín Ramírez, Luis Ramírez Tirado and Juan Ramírez Reyes.

And like in every year, students from nearby schools join in. In exchange, they get to release the last hatchlings of the season.

It takes time to maintain the camp, the roads, the estuary, and the community garden that they have created together.

At the end of a day's work, the women say they are satisfied with the results of their conservation efforts. Now, they attend national meetings to share their experience with other communities and turtle camps in the country.

Together with their families, they are convinced that they must take a hand in preserving their greatest treasure, the natural heritage that sustains not only life itself but also the productive capacity of the region's economy.

* Journalist, director of the independent environmental journalism project <u>Son Playas Mazatlán</u> (https://sonplayas.com/)

Grassroots triumph blocks Las Cruces hydropower project

By Ernesto Bolado*

TEPIC

Faced with fierce opposition from San Pedro Mezquital River Basin communities and grassroots organizations—heavily armed with legal, technical and human rights resources—, the Las Cruces Dam megaproject gave up the ghost in February 2019.

In front of more than 20 media outlets in Tepic, Nayarit, representatives from communities along the river and the NGO SuMar-Voces por la Naturaleza announced that the Energy Ministry (Sener) had withdrawn the proposal for construction of the hydroelectric plant from the National Electric System Development Program (Prodesen 2016-2030), leaving it without a budget; instead, each annual 15-year program update since then calls for diversification of the electrical matrix with alternative renewable energy technology.

At least for now, the last wild river in northwestern Mexico -- and the seventh largest river in the country -- is safe. The cancellation prevented relocation of indigenous Nayeri (Cora) villages,. Furthermore, it protects the river and the nutrients it contributes to downstream the productivity of agricultural valleys and coastal lagoons in the Marismas Nacionales Biosphere Reserve, a Ramsar site.

The free-flowing river has a big impact on farming, ranching, fishing and tourist activities, directly benefitting almost 10,000 producers.

Grassroots organizations, which for the past seven years supported the Nayeri people and fishermen in the fight against the slated environmental destruction, called on the new federal government to adopt a process of open dialogue and inclusion of the communities to discuss alternatives that generate true sustainable development in the region.

Their arguments were based on a study carried out by the <u>NGO SuMar-Voces por la Naturaleza</u> (http://sumar.org.mx), which concluded that the Las Cruces hydroelectric project is strategically and financially infeasible.

The study points out that Las Cruces is not necessary now, nor in the future, to satisfy the requirements of the national power grid given the current state of the energy sector.

"Investing in small-scale renewable technologies close to the place of consumption is more attractive to investors, more strategic for the national power grid and more efficient for distribution networks," said SuMar.

The opening of the electric energy sector to private investment and international trends in energy generation from renewable sources have changed Sener's projections regarding the Las Cruces hydroelectric project. Added to this was a more than 80 percent increase in project costs, due both to the price of construction materials and the variation in the exchange rate with respect to the dollar, resulting in a budget increase of more than 13 billion pesos.

According Ministry of Energy documents, the electrical system in Mexico experiences an energy transmission and distribution loss of approximately 13 percent, which represents a loss of more than \$42.246 billion pesos annually. These losses were not taken into account for the Las Cruces project, which would have produced energy in Nayarit to send to Jalisco, Guanajuato, Michoacán and San Luis Potosí; these states were demanding 73 percent of the energy produced.

What's more, the Las Cruces hydroelectric project was assessed from a financial standpoint and didn't consider the environmental, social and economic costs to communities downstream and

the mitigation that would be required. The costs of operation, maintenance and closure of the facilities during and after their useful life also were not included.

Another factor not evaluated was the health costs due to the increase in dam-related diseases during its construction and operation. According to the study, the primary risk of a hydroelectric project "begins with the arrival of large numbers of workers in a remote area, which spread infectious diseases such as tuberculosis, measles, influenza, syphilis and AIDS."

During dam construction, "illnesses such as diarrhea increase about 60 percent," and women are the most vulnerable, i points out. In addition, at least 12 towns were identified that would have had to be relocated solely because they were within the zone considered at risk for contracting mosquito-borne diseases.

A hydroelectric plant is not necessarily a clean energy provider: In a tropical climate, it emits four times more greenhouse gases during its first 10 years of production than a fossil fueled power station, according to the NGO study, which concludes that the Federal Electricity Commission's greenhouse gas emissions calculation for Las Cruces was incorrect.

*Communications specialist and director of <u>SuMar (www.sumar.org.mx)</u>

Veterinary clinic protects the environment

By Debra Valov*

MULEGÉ

What does a veterinary clinic have to do with the environment? That was a question I asked myself about 15 years ago when I traded my advisory role at a local youth environmental group to volunteer for a backyard spay-neuter clinic in this small desert town on the coast of the Baja California Peninsula.

Working with about 20 foreign volunteers at the Patrons of Animal Welfare (PAW) Veterinary Clinic run by a U.S. expat veterinarian, it didn't take long to see that our group definitely had taken on a global environmental issue at a local level: improving the health of pets and containing their population.

Pets by the Numbers

In the 2016 census, Mexico's National Institute for Statistics and Geography (INEGI in Spanish) reported that seven of every 10 households have pets but about 13.7 million (or 70 percent) of these 19.5 million cats and dogs live on the streets. The number of dogs is estimated to have increased by 20 percent since 2010.

About half a million animals are abandoned each year. According to INEGI, one of the main reasons for this is economic. Many are also abandoned within months of the holiday season after the novelty of a new gift pet wears off and the reality of daily responsibility for it becomes clear.

When I first started spending time in Mulegé, as far back as 1990, the town had a notable population of stray dogs. Dogs were commonly dropped off at tourist beaches, and campers were left to feed them or watch them starve.

The problem with strays

Both cats and dogs can spread disease or parasites in their feces, in bedding, and through physical contact with fur, mucosal membranes and sexual contact. Some of these can even affect humans.

The list includes: mange, fleas and ticks, worms (hook, pin, tape, heart), ringworm (a fungal infection), Transmittable Venereal Disease (dog to dog), viruses and bacterial infections (Parvovirus, Leptospirosis, Distemper and Feline Panleukopenia).

Whether all the wandering dogs in town back in the 1990s had owners was not fully known, but dogs were on every corner, lying in the street, sunning themselves in the winter months or wedged under cars to escape the blazing sun the rest of the time, fighting each other or ganging up on a female in heat, overturning garbage containers and making messes all over the place. Dead animals on the highway, which runs through a number of the town's neighborhoods, were an everyday experience.

Neglect and outright abandonment of cats are also big problems in both Mulegé and the peninsula, where their historic role is less as pet, more as a means of pest control.

"Cats are independent...they can fend for themselves...they will be fine outside on their own." These are all common misconceptions around the world about domesticated cats, which, if left on their own, their reproduction unchecked and their health unattended, can wreak havoc on local fauna and create an unhealthy environment for everyone, as their population soars rapidly.

Within two years, a single fertile female and her fertile female offspring could produce up to 200 individuals.

Media reports often blame domestic pet cats for the decline of native species around the globe. While it is difficult to assess the exact numbers of birds, reptiles and mammals killed each year by cats, estimates show that feral cats account for about 75 percent of the 1-4 billion birds and 90 percent of the 6-22 billion mammals killed each year in North America [1 (#1)]. Of the victims, 75-100 percent are thought to be native species. A data breakdown for Mexico does not seem to be available.

In a unique and delicately balanced desert ecosystem such as exists across most of the Baja California Peninsula, where food and water resources are limited, native mammals, amphibians, and reptiles are not found in abundant numbers. This means that the loss of a small number of breeding individuals could have a substantial impact on the health of any given local species.

Non-venomous snakes, lizards, voles, kangaroo mice, rabbits, gophers, ground squirrels and a variety of bird species are among the common victims of cats in our area. And not all species injured or killed by cats end up as food items.

The cat population in Mulegé is unknown. What is clear is that the population goes through cycles, as does the number sterilized each year. A huge impediment to controlling the cat population is that many of our clients are unable to touch, let alone handle, their cats or catch them for transport to the clinic. Clinic volunteers may need to go out into the field now and then to help residents trap feral cats in their neighborhoods.

The Current Situation

We have an active visiting veterinarian program five months of the year. Vets from the United States, Canada and beyond come to volunteer their skills during a spay-neuter campaign in exchange for housing and a vacation. We also have terrific financial support from the foreign community which makes possible much of our work.

Education is a big part of the clinic's mission, especially about the benefits of sterilizing and vaccinating one's pets. Day to day personal contact with both pet owners and others in the community has been effective in spreading the message. This year we have finally been successful in recruiting a number of local volunteers.

We've seen a change in attitudes towards sterilization since 2006, when men were quite willing to spay their female dogs but wouldn't even consider neutering their males. While that attitude hasn't gone away completely, we have seen a gradual change over the years and now we regularly neuter about one male dog for every two females spayed.

Ten years of data show that over 10,400 animals have received some form of veterinary treatment, with almost 3,200 sterilizations; 1,990 of these were females. About 8,000 rabies vaccines were administered to dogs and cats.

In the last five of the 13 years that I've been involved with PAW, we have seen the most tangible results. Clients and others familiar with Mulegé tell us that many fewer stray dogs are on the streets and those that they do see tend to have collars and look healthy.

A major concern for us in making gains or even just maintaining the current pet population, is the reality that natural disaster is lurking just around the corner. We've been fortunate to have fully recovered three times after the clinic was damaged and equipment lost from flash flooding at its original location. But the damage goes beyond just our facilities to disrupt the social fabric, with residents struggling to recover from property damage and income loss. Pets can take a back burner in these situations.

Since 2009, we have grown and thrived and the population of animals has appeared to have stabilized or declined. But now faced with the Covid-19 pandemic, which necesitated the cancellation of our final spay-neuter campaign for Spring 2020, we worry that economic factors impacting our neighbors may erase much or all of the gains we have as a clinic and community have made, and that the town will see an increase in stray and abandoned kittens and puppies, and a concomitant decrease in the community's overall health.

As volunteers, we are reminded daily by local residents and visitors alike that the clinic provides an important and necessary service to our adopted community. I like to think that we are also doing our small part in making our planet a better place, one cat or dog at a time.

*Codirector PAW Veterinary Clinic, Mulegé

<u>Visit us on Facebook (https://www.facebook.com/PAW-Animal-Clinic-Mulegé-Baja-California-175482609175686/)</u></u>

Patrons of Animal Welfare (PAW) Animal Clinic (https://pawclinic.wordpress.com)

<u>1 (#1R)</u> Loss, S., Will, T. & Marra, P. (2013). *The impact of free-ranging domestic cats on wildlife of the United States*. Nat Commun 4, 1396. [disponible a:

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Resilience Project leaves a lot of work to do in Northwest Mexico

By Fabián Carvallo Vargas*

One of the main challenges that we face today, climate change has widely documented negative impacts that we are experiencing and overwhelming consequences that will come from not taking steps to reduce the cause or adapt to the effect.

Among those that we can see in Northwest Mexico are the increases in desertification and temperatures, changes in the frequency and intensity of rainfall patterns, the earlier arrival of hot seasons, and the loss of wildlife, as well as the most recent manifestation, the current Covid-19 pandemic.

Public institutions, private interests and civil society organizations have undertaken various initiatives to counter these problems, but a lot of hard work remains to be done.

Entities focused on conservation have been carrying out Proyecto Resiliencia (https://www.gob.mx/conanp/articulos/la-conanp-trabaja-para-la-adaptacion-al-cambio-climatico?idiom=es) (the Resilience Project) for more than five years. The program is run by the National Commission for Natural Protected Areas (Conanp), implemented by the United Nations Development Program (https://www.undp.org/content/undp/en/home.html) in Mexico and co-financed by a donation from the Global Environment Fund (GEF (http://www.globalenvironmentfund.com).

Using an ecosystems adaptation approach, the activities they have prescribed aim to go as far as possible hand in hand with the participation of all sectors.

In our region, the Resilience Project has a presence in six protected natural areas:

- <u>Constitution 1857 National Park (https://www.gob.mx/semarnat/articulos/parque-nacional-constitucion-de-1857) (Baja California)</u>
- <u>El Vizcaíno Biosphere Reserve (https://www.gob.mx/conanp/documentos/reserva-de-la-biosfera-el-vizcaino-206925) (Baja California Sur)</u>
- Bahía de los Ángeles Biosphere Reserve (http://www.conanp.gob.mx/conanp/dominios/bahia_angeles/) (Baja California)
- <u>Islands and Protected Areas of the Gulf of California</u> (http://www.conanp.gob.mx/conanp/dominios/islasgc/islas/) (Baja California, Baja California Sur, Sonora, Sinaloa)
- <u>Janos Biosphere Reserve (http://www.chihuahua.gob.mx/areas/janos)</u> (Chihuahua y Sonora)
- <u>Sierra de San Pedro Mártir National Park (https://www.gob.mx/semarnat/articulos/parque-nacional-sierra-de-san-pedro-martir-region-con-importantes-reservas-forestales-de-bosque?idiom=es) (Baja California)</u>

Throughout the life of the project, its principle contribution has been the elaboration of Climate Change Adaptation Programs (CCAPs) linked to Management Programs in Protected Natural Areas, with the aim of recovering the connectivity of priority ecosystems and strengthening their governance through community involvement.

However, as it nears the end of its funding, the Resilience Project falls short of its most difficult task: that of carrying out actions to facilitate the financing and implementation of the measures identified in the CCAPs.

It is not only the government and the institutions mentioned above that promote these projects. Civil society is also accountable and plays a very important role — that of informing, intervening, participating in decision-making and in those tasks that allow reducing conditions of vulnerability, as well as increasing people's adaptive capacity.

* President of the Mexican Network of Environmental Journalists (REMPA), MA in Communications

Last ditch effort: New attacks imperil environmental activists

By Kent Paterson*

Continuing a disturbing trend, a fresh round of threats and attacks against Mexican environmentalists and wildlife defenders were racked up in the first months of this year. Particularly noteworthy were aggressions against persons defending protected species.

On March 4, World Wildlife Day, a naval clash erupted in the Gulf of California when an estimated 20-25 skiffs swarmed two ships belonging to the international marine mammal advocacy organization Sea Shepherd. Before being repelled, the attackers hurled lead weights, rocks and (unsuccessfully) Molotov cocktails at the Sea Shepherd vessels.

Together with Mexican federal authorities, Sea Shepherd monitors illegal gillnet fishing blamed for driving the endemic vaquita porpoise to the brink of extinction. Only a handful of the small cetaceans are believed to remain alive in the Upper Gulf.

The March 4 incident was the fourth time since January 2019 in which Sea Shepherd's ships were attacked by purported gillnet fishers, including a February confrontation in which gun shots were reportedly directed at a Sea Shepherd boat. No injuries have been reported until now.

According to the Mexican Attorney General for Environmental Protection (Profepa), the use of firebombs and the involvement of underage assailants were noticeable developments of the latest attack.

The dire situation of the vaquita, attributed to totoaba fish poachers who utilize gillnets that scoop up all manner of creatures, has elevated the vaquita's survival to a matter of national security, La Jornada recently reported.

According to the Mexican daily, the nation's Interior Ministry has become involved in an issue that has international ramifications since the lucrative totoaba, sometimes called the "cocaine of the sea" because of the high price the fish's swim bladder commands, is smuggled through the United States to its final market destination in China.

In regards to the vaquita, Mexico must also live up to its obligations under the Convention on International Trade in Endangered Species of Wild Fauna and Flora.

On the Pacific coast, wild bird defender Tracy Lyn Willis filed charges with Nayarit state and federal law enforcement authorities after two men allegedly assaulted her at home in Sayulita Jan. 12, punching her in the face and inflicting knife wounds.

Willis, founder and former president of the environmental advocacy organization Ser Su Voz Sayulita, said during an interview that she had been engaged in an escalating confrontation over the past year, punctuated by death threats made against her, with a man who sells birds near Sayulita. Willis and members of Ser Su Voz Sayulita blamed the January attack on a "bird mafia" that specializes in selling protected parrots and other birds.

"We have touched, rattled the cage of, the exotic bird trade in Sayulita," Willis contends.

While no arrests were immediately made after the reported assault, Willis obtained a protective order from the Nayarit state government. According to the bird defender, police patrols were stepped up around her home in the aftermath of the violent attack.

While violence against Mexican environmentalists is nothing new, both the target and location of the aggression against Willis, a foreign born resident and well-known restaurateur, were unusual.

Situated just north of Puerto Vallarta on the Pacific Coast, Sayulita has emerged as one of the trendiest resort destinations in Mexico, drawing legions of surfers and others seeking peace and

serenity. But rapid development of the so-called Riviera Nayarit is generating a host of environmental problems, including inadequate wastewater treatment and disposal and habitat destruction.

"We're trying to turn Sayulita into a green town," Willis affirmed. "We're starting with the parrot. He'll change the consciousness of this town."

Although a 2008 reform to Mexican wildlife law prohibits the capture of parrot species for consumption or commerce, the commercial trafficking of parrots and other exotic birds persists across Mexico. "It's huge," Puerto Vallarta Bird and Nature Festival co-founder Nancy Holland, summed up the wild bird pet market.

In 2013 Semarnat, Mexico's federal environmental agency, reported that 77 percent of captured parrots perished before reaching their final buyers, with 50-60,000 such deaths chalked up annually.

The inhumane conditions in which birds are often trafficked was once again highlighted in March when the Mexican National Guard alerted Profepa of the discovery of 12 young green guacamaya birds packed into two wooden boxes abandoned in the Mazatlán International Airport.

Violation of the parrot protection law is punishable by up to nine years in prison, according to Profepa.

In the southwestern state of Michoacán, meanwhile, environmentalists and human rights advocates suspect efforts to protect migratory monarch butterfly habitat from illegal loggers were connected to the January disappearances and deaths of Homero Gomez, a former logger and promoter of the El Rosario biosphere reserve where monarchs winter, and Raul Hernandez, a butterfly sanctuary guide.

Gomez was found dead in a Michoacán well Jan. 29, while Hernandez's body was recovered Feb. 3 in another location of the state.

The Mexican Center of Environmental Law (CEMDA) along with dozens of Mexican and international environmental and human rights organizations called the deaths murder and demanded an "exhaustive investigation" by the Michoacán state prosecutor's office leading to the punishment of culpable parties. So far, no one has been charged in the deaths of Gomez and Hernandez.

Separately, the United Nations Educational, Scientific and Cultural Organization noted that the El Rosario sanctuary where Gomez worked was made a World Heritage Site in 2008.

The monarch butterfly's epic annual migration from Canada and the United States to Mexico has inspired international conservation initiatives involving the three nations and encouraged seasonal ecotourism in Mexico as an alternative economic development strategy.

"This is a shock," said the Environmental Defense Fund's Eric Holst of the deaths of Gomez and Hernandez. The coordinator of the U.S.-based environmental organization's monarch butterfly preservation project, Holst said a visit he made to Michoacán reinforced the importance of conserving the monarch butterfly's Mexican forest habitat while fomenting ecotourism.

In assuring the success of the trinational movement to conserve the monarch butterfly, "everything that the folks do (in Mexico) is critical," Holst added.

Threats, harassment and violence against Mexican environmentalists were the subject of a new report released in late March by CEMDA. According to the Mexico-City based non-profit, 39 attacks were registered against Mexican environmental defenders in 2019. Although the good news was that incidents were down in comparison with prior years, the bad news was that 15 of last year's attacks were murders.

Previously, CEMDA had logged 460 attacks against environmental defenders between Jan. 1, 2012 and Dec. 31, 2018. The pattern of incidents over the years has encompassed homicide, forced disappearance, illegal privation of liberty, kidnapping, criminalization, intimidation, defamation, burglary, robbery, stigmatization, and inappropriate use of force.

Of the 2019 cases, 40.5 percent of the incidents implicated government officials, including the National Guard, local prosecutors and state police.

Even as the ink on the new CEMDA report was drying, the killing of another Mexican green advocate made the news. Isaac Medardo Herrera, an attorney and activist in Morelos state, was reported shot and killed by two men who knocked on his door the evening of March 23. Medardo had been actively protesting a housing development slated for a wooded area of Jiutepec.

Besides the United Nations High Commissioner for Human Rights, Mexico's official National Human Rights Commission joined in the widespread condemnation of the murder, urging an "exhaustive investigation" and reiterating the autonomous government agency's "concern" over the lack of adequate government protocols and strategies to protect human rights defenders which, in Medardo's case, involved an environmental defender.

*Author of The Hot Empire of Chile and independent correspondent