



Latin America
Specialty Group

CLAG/LASG NEWSLETTER

Conference of Latin American Geography (CLAG) and AAG's Latin America Specialty Group (LASG)

Jennifer A. Devine – Editor & Mei Yang – Co-Editor

CLAG 2022 IN TUCSON RESCHEDULED TO JANUARY 2023

The rapidly evolving public health crisis due to Omicron, deteriorating travel conditions, increasing cancellations by registrants, and numerous breakthrough cases amongst vaccinated and boosted attendees at recent conferences, led CLAG's Executive and Organizing Committees to make the difficult decision to postpone the conference. For more information, visit: <https://geography.arizona.edu/CLAG2022>.

We look forward to seeing you in Tucson in 2023!



Sunset from a residential rooftop in Colonia Doctores, Mexico City, March, 2018. Photo by Ben Gerlofs.

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Letter from the Executive Director

Kristen Conway-Gómez

January 12, 2022

!Prospero Año Nuevo! One of these years this is going to be a veritable and uncomplicated greeting, alas we continue to adjust to constant shifting that the pandemic requires of all. While we were unable to meet in person in Tucson this January, mark your calendars for January 4-8, 2023, when we'll meet for CLAG in Tucson! The UA Clag Colectivo deserves a hearty thank you for the wonderful program they put together. Their hard work, creativity, and planning will pay off and make for a stimulating meeting when we meet.

Continuing the wonderful efforts of Jim Biles et al. with LiveCLAG, we plan to host a series of interactive LiveCLAG sessions over the spring and fall 2022 semesters. Members, please consider putting your name in the hat to coordinate this effort (it comes with a \$500 stipend) that we hope will include four or five sessions with discussion time built in, to foster our community while meeting in person is too complicated. Your ideas for interactive sessions that cover a wide range of CLAG topics are welcome. We envision the sessions as more informal than conference presentations. Consider that the sessions may be recorded and used in classes if the presenter(s) is(are) open to such an arrangement. If you are interested in coordinating this next round of LiveCLAG, please send me a brief email that outlines your ideas and vision by 2/10/22 (kconwaygomez@copp.edu).

As I reported in my last update, we remain an active organization in solid financial standing. [JLAG](#) continues to be an impressive source of scholarship and a testament to the activity of our members and all who are interested in Latin American geography. This year we anticipate identifying a book publisher to augment our scholarly presence. If you have interest in serving as our book series editor, please reach out to the publications committee chair, Chris Gaffney (cg151@nyu.edu).



You won't want to miss exciting Honors Festejo Zoom planned for Thursday, February 3, 7-8pm ET that David Salisbury has coordinated. Join us to celebrate all those being honored in this virtual honors ceremony.

Thank you for your interest in and contributions to CLAG, be safe, see you on Zoom soon!

Kristen Conway-Gómez

Professor & Chair

Department of Geography and Anthropology, Cal Poly Pomona, Pomona, CA 9176



Red mangroves (*Rhizophora mangle*) and coconut palm (*Cocos nucifera*) line the shore of Coco Plum Caye, where a seasonal fishermen's hut stands. Photo by Sophie Williams.

LETTER FROM THE CLAG CHAIR

Catherine Nolin

Dear CLAG friends and colleagues

It appears that my entire tenure as CLAG Chair will overlap with the COVID-19 pandemic and the need to keep CLAG afloat by Zoom. The COVID-19 pandemic remains in full swing with implications for our work lives including delayed or revised fieldwork, teaching, research, and writing. I have remained local and I deeply miss my many connections in Central America. I remain hopeful, though, and will look to all of you CLAG colleagues for inspiration as we, eventually, return to CLAG's signature pedagogy and 'way of being' ... in the field.

CLAG 2022 → 2023

On December 24th, after many emails and Zoom calls, we made the difficult decision to postpone our CLAG 2022 conference planned for the first week of January 2022. Our decision was informed by the rapidly evolving public health crisis due to the Omicron variant of COVID-19, deteriorating travel conditions & flight cancellations, conference cancellations by registrants, and breakthrough COVID cases amongst vaccinated and boosted attendees of the mid-December AGU conference in New Orleans. We are working with the local organizing committee (LOC) at the University of Arizona to reschedule to early January 2023. My heartfelt thanks to the LOC for all efforts to make the conference happen and ethical decision to delay, even at the last minute. We *will* get to Tucson!

LiveCLAG

Last year at this time, we initiated our first ever "LiveCLAG" webinar series (February to mid-April 2021) of eight LiveCLAG sessions which are still available on our [CLAG website](#) and on our [CLAG YouTube Channel](#). Dr. Jim Biles + team

coordinated this pandemic initiative & I want to, again, thank them for keeping us connected. Given our need to delay CLAG 2022 in Tucson, we plan to host 4 or 5 LiveCLAG events this year.



Interested to offer your coordinating skills to your CLAG colleagues? If so, please get in touch with us!

CLAG Festejo

Are you ready to celebrate?! Join us on February 3rd [4-5pm PT, 5-6pm MT, 6-7pm CT, 7-8pm ET] to fête the awardees of our seven CLAG Honors:

- [Carl O. Sauer Distinguished Scholarship Award](#)
- [Preston E. James Eminent Latin Americanist Career Award](#)
- [Enlaces Award](#)
- [Outstanding Service to CLAG](#)
- [Public Engagement Award](#)
- [Ascendente Award](#)
- [CLAG Teaching Award](#)

Let's turn out in record numbers to support our awardees!

In solidarity,
Catherine Nolin

LETTER FROM THE LASG CHAIR

Andrea Marston

Dear LASG and CLAG readership,

I write this letter on the first day of 2022. At this point, I am still hopeful that I will see many of you at some in-person AAG events in New York this year, but I am also aware that new viral variants will make that challenging for many – if not all – of us. In either case, I'm looking forward to seeing many of your faces in either virtual or embodied formats.

LASG has been busy over the last half year. First, a few months ago we organized an online vote to change the transition process for the LASG executive board, which consists of a chair (myself), vice chair (Audrey Joslin), and secretary-treasurer (Jennifer Langill). Prior to the vote, all three positions were for two years and were on the same rotation (i.e., beginning and ending the same year), a system that limited continuity and institutional memory. We proposed several alternative rotational arrangements, and LASG members chose a "rotating" system, where all positions are for three years, and each person elected serves one year as secretary-treasurer, one year as vice chair, and then the last year as chair.

We will begin to shift to this new transition process this spring, though it will take a couple of years to become fully operational. This year, we will organize an election for a new vice chair (who will serve a two-year term, with one year as vice chair and one year as chair) and a new secretary-treasurer (who will serve a three-year term, with one year in each position). I will likely stay on as chair for an extra year (2022-23) to facilitate the new process. LASG members will receive an email requesting nominations for the two available positions by early February, and we hope to hold online elections before the (unusually early!) AAG meeting at the end of February.

Second, we are preparing for the 2022 AAG with much anticipation. At present, we are sponsoring sixteen paper and panel sessions at the upcoming meeting. A complete list will be circulated among our members prior to the event, and we encourage everyone to attend as many sessions as possible. Excitingly, LASG is also co-sponsoring the 2022

JLAG Lecture this year, which will feature a group of Black feminist geographers from Brazil and is scheduled for February 26th at 5:20pm. We are still working out the details for this event, but we know that it's going to be great, and we hope to see many of you there! Immediately after the JLAG lecture, LASG will be holding our joint business meeting with CLAG (February 26th at 7pm), and everyone is welcome to join. Depending on the state of the pandemic and member interest, we may also host a social event after the business meeting – please stay tuned for details on that.



Third and finally, we have updated our awards for 2022. Although we are still inviting applications for the LASG student field study award and the LASG best student paper award, as we do every year, we are also soliciting applications for a new solidarity conference support award. In this last category, we will offer up to three awards of \$200 to support BIPOC attendees of the 2022 AAG Annual Meeting. Please see our website (<https://community.aag.org/lasg/home>) for more information about the awards and where to submit application materials. Please also note that, given the ongoing pandemic, our student field study award will continue to support a wider range of activities than it has historically. In other words, one need not be physically traveling to a "field" to qualify for a field study award. To help us review all the award applications, we will be seeking 3-4 people to serve as ad hoc reviewers in early February; if you are interested, please email me at andrea.marston@rutgers.edu.

Thank you to everyone for your involvement in and support of LASG. We wish you all a safe and happy new year.

Sincerely,
Andrea Marston
Chair, LASG

LETTER FROM THE EDITOR - JLAG

Johnny Finn

JLAG Editorial: Expanding Access to the Journal of Latin American Geography

This is a slightly modified version of the [editorial](#) that is in print in the current issue of the *Journal of Latin American Geography*.

The Journal of Latin American Geography is pleased to announce another new initiative in our long-term effort to increase the volume of open access (OA) content available in the journal, and to increase accessibility of JLAG's content to South-based scholars, researchers, and students.

Beginning in 2022, JLAG will accept optional payments of Article Publishing Charges, or APCs, paid by authors, their institutions, or their funders, to ensure their articles are accessible open access via Project Muse, JLAG's primary online distribution partner. JLAG's new APC rate will be \$800 for articles (co-)authored by North-based lead authors and/or budget holders, and \$100 for articles (co-)authored by South-based lead authors and/or budget holders.

When thinking about APCs, it is worth remembering that JLAG occupies a relatively uncommon space within academic publishing. As we have written in a previous editorial ([vol. 19, no. 2, 2020](#)), JLAG is neither a for-profit journal nor a fully open access journal. Rather, from top to bottom, JLAG is 100 percent non-profit. We are published by the not-for-profit Conference of Latin American Geography (CLAG); we are distributed by the University of Texas Press, an academic press associated with a public university; and the non-profit Project Muse is JLAG's primary vehicle for online dissemination. At the same time, JLAG does generate revenue in the form of download royalties, which go to fund CLAG's robust research and travel grants program. Through this program, CLAG provides \$1,500 fieldwork grants for Ph.D. students, \$1,000 fieldwork grants for Master's students, and \$500 travel grants for the sesquiannual CLAG conference, for students from

anywhere in the world whose primary region of research is Latin America and/or the Caribbean. Beyond covering the journal's own production cost and CLAG's minimal overhead, all surplus value that the journal generates from download royalties is invested into this grants program. Revenue raised from APCs will directly support these same initiatives. (A list of recent CLAG grant recipients is available on CLAG's website: <https://clagscholar.org>.)



Even so, JLAG's paywall does block access to much of the journal's content for scholars, researchers, and students based at institutions without subscriptions to Project Muse or other databases where JLAG is digitally available. So, although we continue to publish articles and essays written by South-based authors—in just the last two years JLAG has published articles by nearly 100 authors and co-authors from nine different Latin American countries, or just about half of authors published in this period—our readership does not reflect this geographical diversity. While the total number of annual full-text downloads from Latin America is on track to more than triple between 2019 and 2021, and readership in Latin America has more than doubled in share of all readers during the same period, nearly eighty percent of full-text hits in 2021 were from IP addresses in the U.S., Canada, and Europe (see Figures 1 and 2). This is at least partially a result of scholars in Latin America not having institutional access to JLAG and thus being blocked by our paywall.

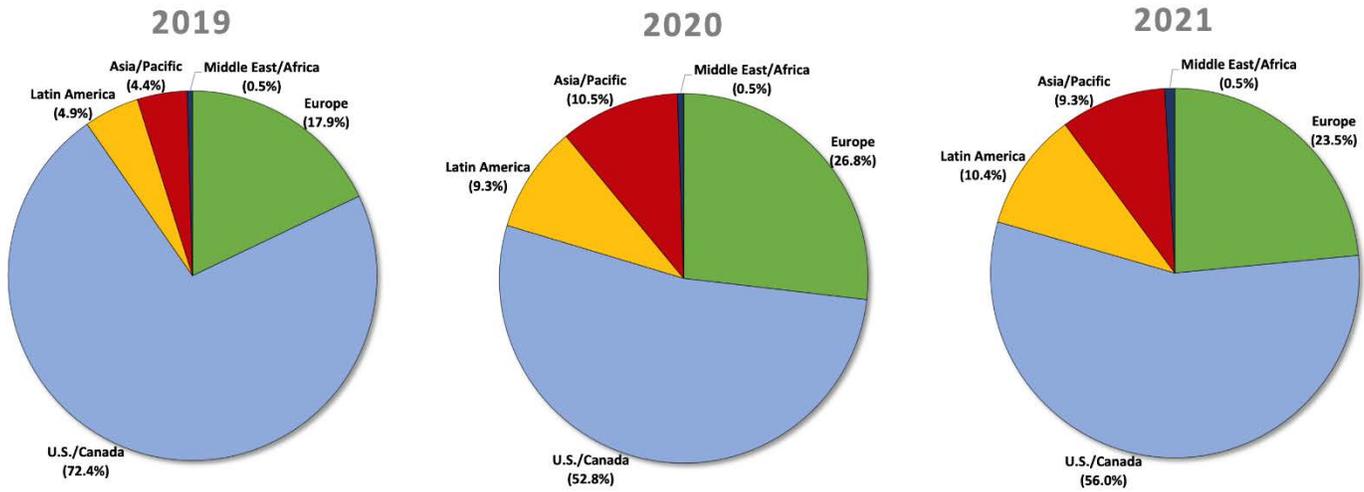


Figure 1: JLAG Readership by year, 2019-2021 (*2021 download data through Sept 2021; Source: Project Muse).

We have taken other recent steps to expand readership beyond North America and Europe. In 2019, we began a program to provide temporary open access to articles and essays from our archive that help to analyze, contextualize, and understand current events and breaking news. In this way, since 2019 we’ve opened access to nearly 100 articles and essays on migration and the Mexico-U.S. border, on feminist geographies, on Covid-19, and on climate change. Furthermore, in 2020 we launched a [new section](#) in the journal—JLAG en Traducción / JLAG em Tradução—that features commissioned translations of peer-reviewed articles submitted to JLAG that have the potential to make broad and long-lasting contributions to Latin American geography, but which may not otherwise achieve the readership they deserve. Importantly, the Spanish or Portuguese versions of articles published in this section of the journal are open access for at least one year after their publication, which ensures broad access to readers outside of North America and Europe. To date, in this new section we have commissioned the translation of, and published open access, articles and essays by Rogerio Haesbaert (Brazil); Joseli Maria Silva and Marcio Jose Omat (Brazil); Diana Vela-Almeida, Sofia Zaragocín, Manuel Bayón, and Iñigo Arrazola (Ecuador); Danilo Borja, Juan Bay, and Conny Davidsen (Ecuador/Canada); the GeoBrujas collective (Mexico); and Joana Salém Vasconcelos (Brazil).

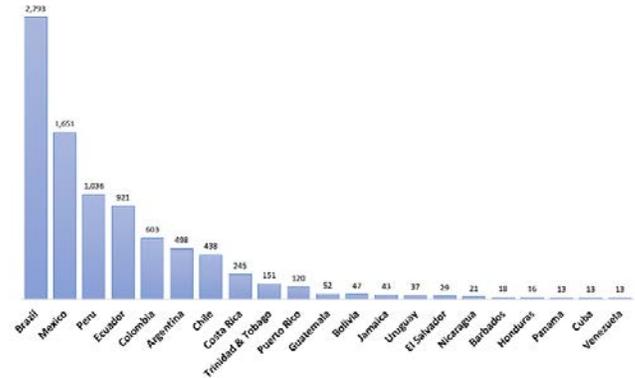


Figure 2. Total full-text downloads by country in Latin America and the Caribbean, January 2019 through September 2021

The JLAG editorial team is committed to expanding access to the journal’s content to South-based readers and institutions. While this new APC program constitutes just a small step in this direction, combined with other recent initiatives it is helping us to achieve wider access. Even so, there is much more work to be done. We are continuously exploring new possibilities for expanding access, and we invite ideas from all readers to further this goal.

JLAG’s Editorial Team:

- John C. Finn, Editor-in-Chief
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- Martha Bell, Associate Editor
- Jessica Budds, Associate Editor
- Jörn Seemann, Associate Editor
- Gabriela Valdivia, Associate Editor
- Diana Tung, Associate Editor for Visual Content

NEW PUBLICATIONS

NEW PUBLICATIONS: PAPERS

- Adamson, J. K., LaVanchy, G. T., Stone, B., Clark, J. A., Dykstra, S. J., & Taylor, M. J. (2021). Geological and hydrogeological assessment of the Brito Formation: Municipio de Tola, Nicaragua. *Hydrogeology Journal*, 29(6), 2285–2304. <https://doi.org/10.1007/s10040-021-02360-w>
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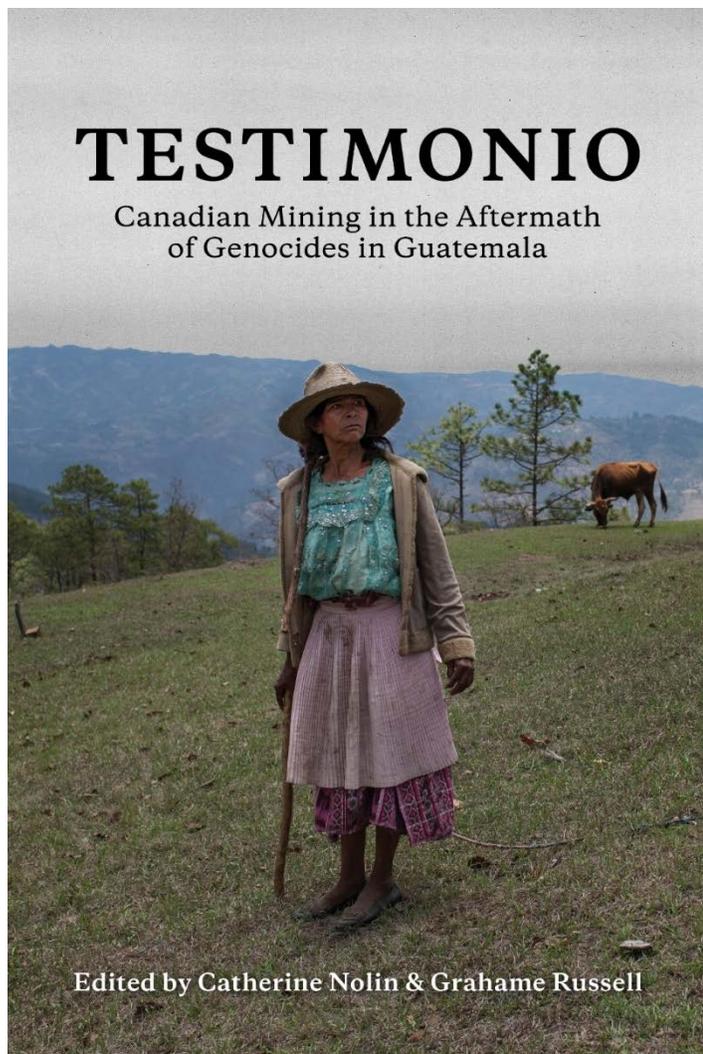
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The *Testimonio* book website is:

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The “Between the Lines” book launch event is available at: <https://youtu.be/T7ZeNaMaFtk>, and includes brief remarks from editors/contributors Catherine Nolin & Grahame Russell, contributors James Rodríguez, Cory Wanless & Emilie Smith. Moderated by historian Dr. Tyler Shipley

Other #CLAG contributors include: Drs. W. George Lovell (Foreword), Alexandra Pedersen, and Nathan Einbinder.

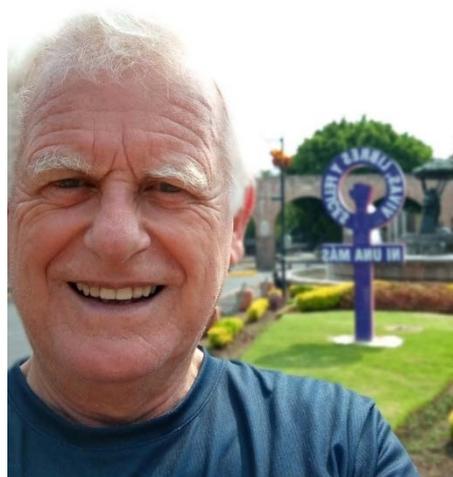
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ON THE COVER: Front Cover: Aerial view of the Cargill port in Santarém, Pará (Brazil), built over an indigenous cemetery. Most soybean exported from this region is destined for China (photo by Marcos Colón, 2018).

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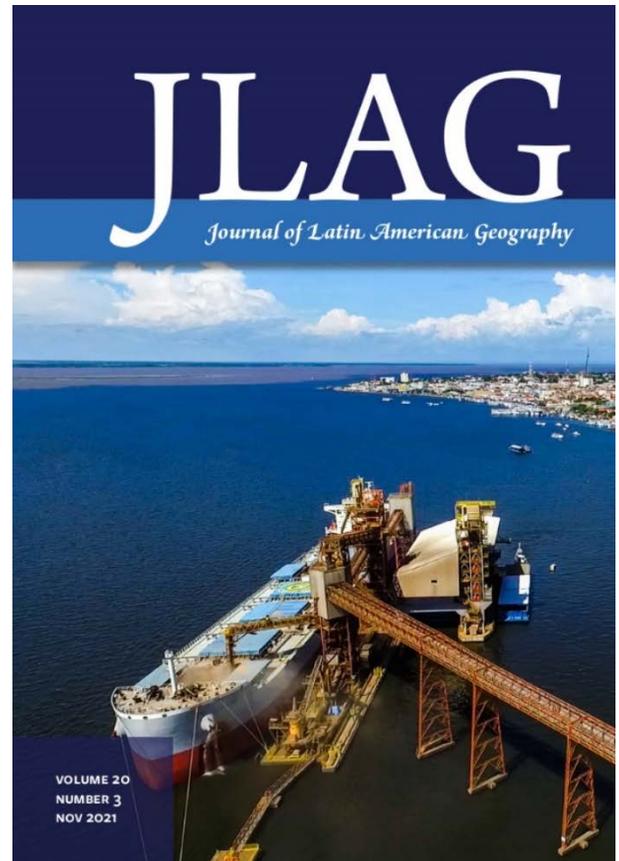
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Walkable Cities: Revitalization, Vibrancy, and Sustainable Consumption* by Carlos J. L. Balsas (review)Bradley Bereitschaft*

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Defiant Geographies: Race & Urban Space in 1920s Rio de Janeiro by Lorraine Leu (review)*Jamie L. Worms*

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Bolivia in the Age of Gas by Bret Gustafson (review)*Nicole Fabricant*

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Forest, Field, and Fallow: Selections by William M. Denevan ed. by Antoinette M. G. A. WinklerPrins and Kent Mathewson (review)*Andrew Sluyter*

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Stuck with Tourism: Space, Power, and Labor in Contemporary Yucatán by Matilde Córdoba Azcárate (review)*Velvet Nelson*

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Tropical Travels: Brazilian Popular Performance, Transnational Encounters, and the Construction of Race by Lisa Shaw (review)*Jordan Brasher*

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Where Caciques and Mapmakers Met: Border Making in Eighteenth-Century South America by Jeffrey Alan Erbig Jr (review)*Case Watkins*

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DOI: 10.1353/lag.2021.0044

Palm Oil Diaspora: Afro-Brazilian Landscapes and Economies on Bahia's Dendê Coast by Case Watkins (review)*Joseph L. Scarpaci*

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DOI: 10.1353/lag.2021.0045

CLAG/LASG MEMBER AWARDS AND HONORS

Joel E. Correia. 2021. National Science Foundation. Dynamics of Integrated Socio-Environmental Systems Program. “DISES: Resilient socio-environmental systems: Indigenous territories in the face of change”. PI: Walker, R. Co-PIs: Acevedo, M. A.; Correia J. E.; Esbach, M.; Simmons, C. Award # 2108308.

Joel E. Correia. 2022-2023. Fulbright Scholar Flex Award. U.S. Department of State. “Building the future: Infrastructure, climate change, and Indigenous environmental justice in Paraguay’s Chaco”.

Joel E. Correia. 2021. Political Ecology Society "Eric Wolf Prize" for best paper. "A political ecology of jurisdictional REDD+: Investigating social-environmentalism, climate change mitigation, and environmental (in)justice in the Brazilian Amazon". Co-authored with Marcelo Santos Rocha da Silva and forthcoming in the *Journal of Political Ecology*.

Adrienne Johnson. 2021. Mentor of the Year. University of San Francisco

RECENT GRADUATES AND NEW POSITIONS

SUCCESSFULLY DEFENDED THESES AND DISSERTATIONS:

PhD

Rita Libertad Adame Campos. Doctorado en Geografía, UNAM. Tesis: “Patrones espaciales de degradación forestal por el uso de leña en un ejido de la Meseta Purépecha, Michoacán, México, México”. Bajo la dirección del Dr. Adrián Ghilardi. Reconocimiento: Mención honorífica.

Janik Granados. University of Twente, Enschede, The Netherlands. Thesis: “Power, information and the framing of forest services under Payment for Environmental Services (PES)”.

Mabel Sánchez Matías. Doctorado en Geografía, UNAM. Tesis: “Evaluación de las capacidades institucionales para adaptación al cambio climático: Casos de organizaciones gubernamentales locales en la Cuenca del Lago de Pátzcuaro, Michoacán”. Bajo la dirección del Dr. Keith Michael McCall. Reconocimiento: Mención honorífica.

Karly Marie Miller. PhD in Marine Science, University of California, Santa Barbara. Thesis: “Development transitions in small-scale fisheries – Evaluating socio-ecological impacts of coastal tourism development in the Colombian Pacific”.

David Jiménez Ramos. Doctorado en Geografía, UNAM. Tesis: “TO ALTÉPETL TENTZON (nuestro territorio, nuestra vida). Construcción y apropiación social del territorio: Narrativas, prácticas territoriales y testimonios geográficos”. Bajo la dirección del Dr. Eckart Boege.

José Manuel Mojica Vélez. Doctorado en Geografía, UNAM. Tesis: “Política, territorio y paisaje en humedales costeros: Reserva de la Biosfera la Encrucijada, Chiapas”. Bajo la dirección de la Dra. Sara Barrasa. Reconocimiento: Mención honorífica.

Masters

Araceli Benítez Franco. Maestría en Geografía, UNAM. Tesis: “Análisis espaciotemporal del proceso de pérdida forestal en los municipios de Charo, Hidalgo, Indaparapeo, Queréndaro y Zinapécuaro, Michoacán, México”. Bajo la dirección del Dr. Luis Miguel Morales.

Pedro Gómez Molina. Maestría en Geografía, UNAM. Tesis: “La región de El Oro y Tlalpujahua, siglos XVIII-XIX. Un análisis espacial a partir de la cartografía histórica”. Bajo la dirección del Dr. Pedro Urquijo.

Yasmina Maresma Clapé. Maestría en Geografía, UNAM. Tesis: “Análisis geoespacial del arbolado público urbano en el Periférico de la ciudad de Morelia, Michoacán”. Bajo la dirección del Dr. Manuel Bollo.

Paz del Carmen Coba Pérez. Maestría en Geografía, UNAM. Tesis: “Diseño y planeación de un curso para levantamiento de información del territorio con drones”. Bajo la dirección del Dr. Luis Miguel Morales y el Dr. Manuel Mendoza.

Anika M. Rice. Masters in Geography, University of Wisconsin-Madison. Thesis: “Guatemalan agroecology movements during Covid-19: Resilience, economic solidarity and constraints for smallholders”. Advisors: Dr. Lisa Naughton and Dr. Matthew Turner.

Stephannie de Souza Fernandes. Masters in Environmental Science and Policy, Northern Arizona University. Thesis: “Conflict, connectivity, and confluences: Limitations and possibilities for Amazon riverine ecosystem protection”. Advisor: Dr. Denielle Perry.

Carina Grajales Veerkamp. Maestría en Geografía, UNAM. Tesis: “Cambios y condición actual del corredor ribereño principal de una cuenca rural en el trópico seco de Michoacán (México)”. Bajo la dirección del Dra. Ana Laura Burgos y Dr. Jean Francois Mas Reconocimiento: Mención honorífica.



Mabel Sánchez Matías



Janik Granados



Anika M. Rice

NEW POSITIONS:

Martha Bell was appointed Director of the Geography and Environment Program at the Pontifical Catholic University of Peru and was promoted to Associate Professor at the same institution (2021).

Scott Odell, a graduate of Clark University's Graduate School of Geography, accepted a new position as a Postdoctoral Associate in MIT's Environmental Solutions Initiative, Program on Mining, Environment, and Society.

Karl Offen, January 1, 2022, joined the Department of Geography and the Environment as a Professor of Geography in The Maxwell School of Citizenship and Public Affairs at Syracuse University.

CLAG STUDENT TRAVEL AWARD WINNERS, 2022

2022 PHD STUDENT TRAVEL AWARDS:

Recipient	Project Title
Lucas Brasil Pontifícia Universidade Católica do Rio de Janeiro	<i>De uma erva só se enfada o gado': The not-so-accidental introduction of African grasses in the Brazilian Atlantic Rainforest</i>
Xochizeltzin Castaneda Camacho University of Texas at Austin	<i>Unraveling the overlapping of human-environmental processes for the assessment of vegetation loss in Protected Areas of arid northern Mexico</i>
Nushy Golriz UCLA	<i>Migration scalar politics: Indigenous Venezuelan refugees in Brazil</i>
Anisa Kline Ohio State University	<i>Invisible and uncounted: A preliminary report on H-2A workers in Ohio</i>
Carla Macal University of Oregon	<i>"The state does not take care of us we take care of ourselves." Justice for the Guatemalan fifty-six girls</i>
Anika Rice University of Wisconsin- Madison	<i>Guatemalan agroecology movements during Covid-19: Resilience, economic solidarity and constraints for smallholders</i>
Parisa Rinaldi Universidad de los Andes	<i>Like harvesting tarulla: Decolonizing environmental justice from a petrolized swamp</i>
Taylor Tappan University of Kansas	<i>Colonization, conservation, and cadaster: A case study of the forest-agriculture frontier from Costa Rica's largest Indigenous territory</i>
Ramzi Tubbeh Pennsylvania State University	<i>Peru's persistent hydraulic development model amid shifting water governance regimes</i>
Jessica Villena Sanchez University of Denver	<i>Everyday older adults' mobilities in cities in the Global South, with a focus on Latin American cities</i>
Michael Waylen University of Florida	<i>Rethinking North-South configurations in a corporate food regime</i>

2022 MASTERS STUDENT TRAVEL AWARDS:

Recipient	Project Title
Courtney Mathers University of Denver	<i>Arbuscular mycorrhizal fungi and soil resilience: How fungi can inform climate change mitigation and adaptation strategies in Maya milpa management</i>
Kathryn McDaniel Texas State University	<i>Grassroots governance: Activism and organizing in the Matamoros Migrant Camp</i>
Mina Moscatelli University of Wyoming	<i>Bamboo and coastal Ecuadorian livelihoods in Manabí, Ecuador</i>
Elise Thompson Texas State University	<i>The role of climate change and natural hazards in migration from Central America to the United States</i>
Sophie Williams University of Alabama	<i>Change detection and marine management in South Water Caye Marine Reserve, Belize</i>



Courtney Mathers measuring the height of a maize plant before collecting a root sample.



Sophie Williams snorkels on a shallow patch reef to verify the presence of corals underwater.

2022 CLAG FIELD STUDY GRANTS

Deadline March 14, 2022

The Conference of Latin American Geography (CLAG) invites applications for the 2022 CLAG Student Field Study Grants. Each year CLAG awards named grants at the Ph.D. level (Bernard Nietschmann, Robert C. West, and James J. Parsons grants) and at the master's level (Clarissa Kimber, William M. Denevan, and Oscar Horst grants).

These grants are intended to support graduate student members of CLAG in their thesis or dissertation research in Latin America or concerning the Latin American diaspora. The awards are not intended to cover all fieldwork costs, but rather to assist students working towards the Master's degree or Ph.D. in their field and/or archival research in Latin America. The award for the MA/MS recipients will be approximately \$1,000 and for Ph.D. recipients about \$1,500.

Eligibility:

- Member of CLAG before the application deadline;
- Registered as a graduate (M.A., M.S., or Ph.D.) student in a geography department or related discipline;
- Regional area of research in Latin America, including the Caribbean, is given priority. If the regional area of research is outside of Latin America/Caribbean, a clear justification of how the study relates to dynamics in Latin America must be provided. CLAG Field Study Awards are for field and archival research, not for attendance at academic meetings or language acquisition. Due to COVID19, there is greater flexibility in research topics, design, and expenses than would normally be considered in past years;
- Recipients of previous CLAG Field Study Awards are ineligible to apply with the exception that previous winners at the Master's level may apply for the Ph.D. level award if they are enrolled in a Ph.D. program;
- Fieldwork must be conducted during the dates specified in the proposal. Any anticipated significant changes must be reported to the CLAG Chair;
- All awardees must provide a home address;
- Awardees must supply either a US social security number or an Individual Taxpayer Identification Number (ITIN) to the CLAG Treasurer before receiving the award (this is necessary for CLAG to comply with IRS reporting obligations).

Guidelines:

Proposals will be evaluated on criteria including but not limited to the following:

- Quality of the proposal:
 - Coherent research question(s);
 - Clearly described and viable research design with research question(s) situated in relevant theoretical or conceptual literature and appropriate methods explained;
 - Feasibility of proposed work and viable research timeline;
 - Adequate preparation demonstrated;
 - Academic rigor and potential contribution to Latin American geography.

Application materials may be in English, Spanish, or Portuguese.

Please see the full instructions at <https://clagscholar.org/awards-funding/student-field-study-award/>

For any questions, please contact Rebecca Clouser (rclouser@wustl.edu), CLAG Student Grants Committee chair. As always, we look forward to reviewing your innovative proposals!

CLAG FIELD STUDY REPORTS, 2020-2021

2020 FIELD STUDY REPORTS

Alana M. Rader, Ph.D. Candidate, Rutgers University

Project: Opportunities and constraints of conservation discourse for forest regeneration in the Mexican Mesoamerican Biological Corridor

Abstract

The Mexican portion of the Mesoamerican Biological Corridor (MxMBC) hosts the largest tracts of seasonally dry tropical forest in Mexico alongside diverse and extensive land uses, despite regular environmental disturbances such as hurricanes. Following environmental disturbances in the region, the process of forest regrowth has been central to long-term tropical forest use, as biophysical patterns of regeneration are driven by the environmental tradeoffs inherent in land use. At the same time, land uses are governed by agricultural policies that have sought to incentivize land use intensification, privatization, and regulate field rotations, often in combination with conservation initiatives and set asides (Dobler-Morales et al., 2020; Padoch and Pinedo-Vazquez, 2010). Policies that center intensification may exclude specific community land use histories and spatio-temporal environments that together have defined continuous tradeoffs of land use and forest regeneration in the MxMBC. Analyzing these tradeoffs, and the degree to which Mexican agrarian policies align with them, provides the opportunity to understand how discourses of conservation, biophysical change, and community land use decisions interact with and influence material biophysical patterns of forest regeneration.

This research aims to understand how national policy discourse around forest regeneration and ecosystem processes in Mexico relates to that of ejido communities in the MxMBC, with implications for the state of continuous tradeoffs

between land use and ecosystem processes through forest regeneration. A contemporary agricultural policy, *Sembrando Vida*, has been initiated across Mexico and is presented as an alternative to previous policies that centered agricultural intensification and privatization alone, with a multi-faceted goal of addressing poverty and ecosystem degradation through simultaneous food production and the restoration of proposed 1,000,000 ha of forest across Mexico. We analyze whether the new *Sembrando Vida* program is a continuation of a neoliberal environmentalism policy rhetoric centered in agricultural intensification, and therefore is misaligned with the reality of community land use histories in the MxMBC and the spatio-temporal patterns of forests, which together have depended on the tradeoff between land use and ecosystem processes through the process of forest regeneration.

Field Research

The aim of field research for this study is to understand the discourse around forest regeneration and conservation in ejido communities of the MxMBC, the degree to which this discourse aligns with that of the *Sembrando Vida* program, and the material implications for forest regeneration and biophysical processes. The communities of Blanca Flor and Laguna Kana were chosen for this research, based first on the fact that members of these communities are participating in the *Sembrando Vida* program (Figure 1), and second based on differing uses of communal forest lands (i.e. honey production and cash crop cultivation vs. semi-subsistence agriculture and forestry). The Conference for Latin American Geography (CLAG) Field Study Award was used to support 3-weeks of travel for myself and a research assistant to perform field research in Blanca Flor, the first of these two case study communities in Quintana Roo, Mexico, starting in the Fall of 2021.

While in Blanca Flor we were able to meet with nearly 20 individual land users, visit numerous Sembrando Vida plots (Figure 2), and speak with the official government employee that oversees the Sembrando Vida program in the community of Blanca Flor.



Figure 1. Mural in Blanca Flor linking the process of pesticide application and intensification to the destruction of community well-being.

Data collection in Blanca Flor consisted of semi-structured interviews facilitated through a community mapping exercise with men and women that have ownership over a plot of land, either through ejidal directive or through the Sembrando Vida program. We began each interview by presenting a large map of forest regeneration



patterns following Hurricane Dean that I identified in Blanca Flor (Figure 3).

We discussed this map with study participants, to indicate areas of forest regeneration, and gain information on the land uses and community activities that existed in these areas before the process of forest regeneration began. Emerging topics and initial annotations regarding regenerating forest areas in Blanca Flor were revisited, referenced, and added to throughout the interview, serving as a building block for conversation points. By facilitating interviews through the mapping exercise, community members were able to engage with the maps to make their narratives of conservation, forest regeneration, and Sembrando Vida spatially explicit, by noting areas of land use change and areas of personal, political, and biophysical importance. Following field data collection in Blanca Flor, annotations and notes from the mapping exercise are being digitized into a community forest regeneration map for Blanca Flor. This map will be delivered to Blanca Flor during a CLAG supported field work trip scheduled to begin January 10, 2022.

Next Steps

The CLAG Field Study award will be used to facilitate three weeks of field research to conduct



Figure 2. Photographs taken from an agricultural plot established as part of the Sembrando Vida program in Blanca Flor. In the left photograph, we see the entrance to the plot, with a sign saying “Paakal Kuxtal”, or Sembrando Vida in Mayan. In the right photograph, we see an orchard planted in half of the plot as part of the program.

semi-structured interviews through the community mapping exercise in the second community of Laguna Kana starting on January 10, 2022. Conducting interviews in both Blanca Flor and Laguna Kana will facilitate a comparison of dominant community land uses and forest regeneration discourses between communities that are participating in the Sembrando Vida program. Interview recordings from both Blanca Flor and Laguna Kana will be transcribed and analyzed alongside Sembrando Vida policy documents in a discourse network analysis to better understand the complex relationships between community land use decisions, ideas around forest conservation and recovery, and material patterns of forest regeneration that maintain ecosystem processes in this important human occupied tropical landscape of the MxMBC.



Figure 3. Photograph of the mapping exercise used to facilitate semi-structured interview questions in Blanca Flor.

Acknowledgements

This field research would not have been possible without the support and collaboration of my supervisors and co-authors, Dr. Laura Schneider, Dr. Birgit Schmook, and Dr. Robin Leichenko, as well as for the support in data collection by Jorge Castelar and the Puc Kauil family of Blanca Flor. Financial support for this research is provided by the Conference of Latin American Geography's Field Study Award, and for the second phase of

research in Laguna Kana, will be supplemented by financial support from the Society of Women Geographers.

Works Cited

- Dobler-Morales, C, Roy Chowdhury, R., Schmook, B. (2020). Governing intensification: the influence of state institutions on smallholder farming strategies in Calakmul, Mexico. *Journal of land use science*, 15(2 – 3): 108 – 126.
- Padoch, C., Pinedo-Vasquez, M. (2010). Saving slash-and-burn to save biodiversity. *Biotropica*, 42(5): 550 – 552.

Anika Rice, University of Wisconsin-Madison

Project: Pandemic-Era Agroecology in Guatemala: Economic solidarity and smallholder resilience to economic shock

In summer 2020 I was planning to do three months of ethnographic work with women leaders and members of agroecological community organizations in Rabinal, Baja Verapaz, Guatemala. My goals were to document women's organizing and barriers to organizing within these organizations, and to record the agrobiodiversity contributions of these projects to their communities. An action-based part of my research plan was to facilitate a farmer exchange between members at my sites in Rabinal with a similar organization in the Western highlands of Guatemala in the department of San Marcos, in collaboration with other UW Madison researchers.

Because of the pandemic and my inability to do in-person fieldwork, I pivoted to a remote study about Guatemalan farmers' challenges and responses during the COVID-19 pandemic. I have used contacts at other organizations, mentioned above, and partnered with two other researchers to identify a wider set of field sites. In December 2020-April 2021, I partnered with eight farmer organizations in five departments to conduct

surveys and record short interview responses with farmers via Zoom and Whatsapp. I had four research questions (RQs):

RQ1: How were smallholder farmers who are connected to agroecology organizations affected in terms of production, consumption and commercialization of food crops during the COVID-19 pandemic?

RQ2: How does agroecology affect smallholder resilience to the economic shocks associated with sudden shifts in access to formal markets?

RQ3: Given the variable and differentiated effects of the closure of municipal markets on smallholders' ability to sell agricultural products, how did farmer organizations influence farmers' responses to economic shock?

RQ4: How do organizations' efforts to promote agroecology open up space for longterm solidarity building among farmers?

In short, a combination of qualitative and quantitative data suggests that farmers were most affected in terms of sales of agricultural goods during the pandemic, due to the qualitatively distinct nature of mobility and market restrictions during the pandemic. I also found that among farmers with different levels of exposure and participation in agroecology, the more agroecologically-engaged farmers were more resilient at the farm level (in terms of production and consumption). Finally, qualitative data suggests that agroecology organizations support social networks that made farmers more agile in their response to economic shock. This research uses a resilience framework to evaluate livelihood outcomes during the pandemic, while contextualizing debates around agroecology and critiques of resilience in marginalized and/or indigenous communities.

The field study award was used for compensating my partner organizations as well as

individual farmer participants. I asked each organizational contact to fill out lengthy surveys

with the leaders and directors of their organization. At each organization, my contacts were also research assistants who spent time identifying farmer participants. At four field sites, I provided additional hourly compensation for translation services from Mayan languages to Spanish. I also provided a modest stipend to the individual farmer participants (70 in total) for their time and the use of internet data on their devices. Some other minor costs were incurred for bank and money-sending transaction fees to each of the eight organizations.

While this remote research was vastly different than what I had expected, it is contributing to my future academic plans in exciting ways. Because I got to work with eight agroecology organizations, I now have more research contacts around Guatemala. I plan to visit many of them in Summer 2022, and see these new connections as possible partners for PhD research. I also feel grateful that I have a deep understanding of the rural and agrarian effects of the pandemic in Guatemala, because any future research will need to be situated in these new realities.

Thank you for your continued support; I look forward to sharing this work with the CLAG community via presentations or publications.

Sincerely,
Anika Rice
University of Wisconsin-Madison

Abstract

Title: *Guatemalan Agroecology Movements During Covid-19: Resilience, economic solidarity and constraints for smallholders*

At the onset of the Covid-19 pandemic, the Guatemalan government's nation-wide quarantine, curfews and restrictions on mobility directly affected rural *campesino* families who depend on both subsistence and commercial food production. These unprecedented market restrictions created a distinct economic shock for Guatemalan smallholder producers, which arrived on the trails

of multiple other economic and environmental shocks. Of concern for smallholders during the pandemic was the inability to purchase and sell agricultural and other goods at local and regional markets, loss of off-farm employment, a lack of access to agricultural inputs and other related factors. At the same time, farmer organizations have been promoting agroecology – the science, movement, and practice of sustainable agriculture and resource management – in Guatemala for decades in order to strengthen rural livelihoods, develop food-sovereign communities, defend indigenous rights to land and life, and develop adaptations to climate change. This study works with eight farmer organizations within agroecology movements to explore how agroecology affects resilience during economic shock and to identify constraints and opportunities for agroecology in Guatemala as it relates to market access and solidarity building. Surveys and semi-structured interviews were conducted remotely, then coded for qualitative and statistical analysis.

Qualitative and quantitative data suggest that smallholders engaged in agroecology maintained production and consumption to higher degrees than sales during the pandemic, given the difficulties of maintaining intra-community and regional market connections. Data also suggest that agroecological practices and prior engagement with agroecology organizations are correlated with increased resilience to the pandemic's economic shock at the farm level, with regards to production and consumption. Farmer organizations that promote agroecology may play a role in supporting farmers' resilience to extreme economic shock. Organizations support social networks that increase producers' agroecological practices and their ability to respond to market shocks. This study highlights the collective actions that farmer organizations took during the pandemic to support food access and informal market access. The variation across organizations offers a set of salient examples of people working toward economic solidarity within agroecology, while facing myriad structural constraints.



Anika Rice (on left) with a Guatemalan farmer and community organizer, January 2020



Ethnography in Action, Huehuetenango, Guatemala

2021 FIELD STUDY REPORTS

Ingrid Díaz Moreno, Department of Geography, University of North Carolina, Chapel Hill

Project: Working women: a feminist geography of oil-palm plantations in Colombia

My dissertation project aims to understand the labor regimes and environmental transformations produced by the expansion of oil palm plantations in Colombia, by looking at plantation women workers' everyday experiences. My purpose is to delve into the processes of proletarianization and

feminization of the labor force, the production of plantations towns, and the intimate and quotidian effects of these larger transformations.

Thanks to the CLAG Field Study Award I was able to travel to Colombia to do preliminary fieldwork in the summer of 2021. I focused my fieldwork in four objectives: 1) to understand the history of oil palm plantations in the municipality of Cumaral, in the Colombian Llanos region; 2) to interview women workers about their labor trajectories and relations, and how their job intersects with their everyday life; 3) to explore institutional programs about rural workers and 4) to establish connections with women workers and local scholars and set the bases for my future research. Despite the limitations imposed by the pandemic in Colombia, I made 15 interviews to different actors: officers of the Food and Agriculture Organization, women and men working in the oil palm sector in Cumaral -some of them member of the National Union of Workers of the Agroindustrial, Agricultural, Agri-food Sector, communitarian leaders and scholars working on plantations in other regions of Colombia. I also visit Cumaral, and identified a specific place to focus my research on: Veracruz, a small town within this municipality.

Cumaral is located in the foothills of the Cordillera de los Andes, and holds one of the oldest plantations in the department of Meta. The expansion of oil palm started in the early 1970s encouraged by foreign investors, who also stimulated the migration of black workers from the Valle del Cauca, a region characterized by a large sugar cane industry. The workers established Veracruz, a small town that was described as El Africa de los Llanos: The Africa of the Llanos, because it is mostly populated by black people. This demographic composition is exceptional in the Llanos, a region without a colonial history of black enslavement but with violent racial hierarchies: indigenous communities that were systematically killed and enclosed in reservations, and a dominant population that identifies as “mestizos”, “whites” or “civilized people”.

Veracruz grew as a plantation town, and currently the majority of its people work for or depends on someone’s work in the oil palm companies. Moreover, the palm oil industry, both the crops and the oil production factories, is the main source of paid work in the municipality. This is especially relevant for women, who have few jobs offers and for whom this sector has higher salaries compared to the low wages in cleaning and catering. Many companies have encouraged women’s incorporation to the plantations and factories to get certifications, such as the Roundtable of Sustainable Oil Palm Certificate, and be more competitive in the market.

In this context, women’s involvement in this extractive economy has increased over the last decades.

The incorporation of women into wage labor is based on and reproduces a hierarchical and unequal divisions of labor that exploit women’s bodies inside and outside the plantation. Women are assigned to duties traditionally considered more feminine, such as cooking and cleaning, human resource management and health care. As in other economic sectors, these activities are less remunerated than those performed by men. Some women work in the field, especially in the nursery and as pollinators, but both jobs are considered less



Oil palm truck in the unpaved roads of Veracruz, Cumaral

¹ At the time of my fieldwork, Colombia was going through one of the worst moments of the pandemic: cases grew dramatically between June and July, the ICU reached its maximum capacity and many institutions closed or restricted in-person attention.

difficult to perform. Only a few are hired as fruit cutters, a better paid activity considered masculine. In addition to the wage gap between women and men, women also experience high levels of risk in the plantation, especially the pollinators. The risk is associated with the long walks through the plantation under the intense heat of the region, and the specific arrangements of the nature that supports the plantation. The grass and palm foliage used to protect the soil and palm roots make walking difficult and hide holes and snakes from the workers' view, making the workday slower and riskier. Manager decisions to improve productivity, that are informed by scientific knowledge about the palm and the soil, shape women's experiences and bodies in the everyday.

Women's care activities at home are also involved in the plantation reproduction. In addition to their work in the plantation, they cook and care for their husbands, brothers and fathers that also work on the plantation. The women who do not work directly on the crops, take care of the children of those who are employed by the industry. Thus, women paid and unpaid labor contributes equally to the plantation economy.

Despite this inequality, women workers certainly challenge the sexual division of labor by breaking the traditional placement of women in the private space of the home. By challenging traditional notions and gender relations, they have also used



An oil palm plantation worker, Dolany (right), shares her health issues after working the plantation for 10 years. Veracruz, Cumaral

their role as workers to gain social and economic independence. This independence is especially crucial for single, female-headed households. However, these gains are not without tensions. For women workers, the time constraints surrounding motherhood and family care part of the challenges and difficulties that arose with the feminization of the labor force.

Hence, by paying attention to rural workers, I want to bring together the analysis the everyday production of female labor force and how it contributes to the reproduction and permanence of the plantation regime.

Anisa Kline, Ohio State University

Project: Invisible and Uncounted: The Health and Lives of H-2A workers in Ohio

Invisible and Uncounted: The Health and Lives of H-2A workers in Ohio is a dissertation project focused on the H-2A population in Ohio. Its purpose is to obtain basic demographic information (age, sending region within Mexico, years in the H2A program, etc) about H-2A workers and also learn more about their occupational health, self-reported health and healthcare access. The projects looks for relationships between their work and living conditions on the one hand, and the health-related topics on the other. The intention is to identify the areas of greatest concern and generate information that is useful for policy, advocacy and farmworker support. This piece specifically focuses on information learned from participant observation at migrant health clinics and semi-structured interviews with stakeholders.

Keywords: H-2A, farmworkers, migrant health

The purpose of the research this summer was to learn more about the H-2A guestworker program and identify areas of concern that could then be focused on in a survey of H-2A workers. Semi-structured interviews were conducted with stakeholders, such as clinicians serving migrant populations or migrant rights' advocates, and with government employees, such as housing inspectors with the state health department or investigators with the Department of Labor, in charge of administering and/or enforcing various aspects of the program. Participant observation was also conducted by volunteering at migrant health clinics and COVID vaccine events, and participating in the monthly virtual meetings of the Farmworkers Agencies Liaison Communications and Outreach Network (FALCON). The funds were spent primarily on gas, as both the migrant health clinic and the COVID vaccine events were 90-120 miles from my house. Funds were also spent on hotel stays when necessary and food and incidentals while in the field.

The migrant health clinic was held every Wednesday and is actually located on a large farm, Burrma Brothers, that employs H-2A workers. Although the doctor and the administrative assistant both spoke Spanish, the nurse did not, so I acted as a volunteer interpreter for her, interpreting for those



Figure a: A cilantro field outside the Community Health Services migrant health clinic

patients who did not speak English. The experience was instructive on many levels. First, I simply spent time in an agricultural setting, observing the rhythm of the work outside our office (when people took lunch break, the bus that transported the workers to the different fields, etc). Secondly, in my role as interpreter, I interacted with some farmworkers, which gave me a chance to practice my Spanish and learn certain medical terms. Thirdly, the doctor was very supportive of my project, and he introduced me to a crew leader who supervised H-2A workers and one of the Burrma Brothers' growers (which is a family owned business). The grower gave me a tour of the farm and spoke to me at length about his experience with H-2A workers. I learned that he only began hiring them a few years ago, because of pressure from ICE, and that he contracts with an FLC, whom he pays a flat rate to recruit, transport and supervise the H-2A workers. I also learned that this year, with the Biden administration, he has had H-2A workers disappear. That is, they simply use the visa program as a free and/or safer method of entering the United



Figure b: Anisa (far right) with the staff of the Community Health Services clinic

States, and once here, leave for other work. This experience is something I will be following up on in future interviews with other growers.

Also, the days at the clinic were extremely slow. One week we only had one person show up the entire day. Both the doctor and the woman at the front desk had been participating in this clinic for over a decade and they said that as the number of H-2A workers in the area increased, the number of visits to the clinic went down. The need is still there, since the doctor noted that during the 2020 season, when telehealth was the primary way he was seeing patients, he got many, many, calls from H-2A workers, but that never translated into in person visits in 2021. Healthcare access is one of the main foci of my research, so this data, even anecdotal, was interesting. I've spoken with two other clinicians at migrant health clinics and their experiences were different: patient volume was still roughly the same, even as the number of H-2A workers in the area increased. There are many possible reasons for this, but it points to, at the very least, variation within Ohio in terms of healthcare utilization by H-2A workers.

I also volunteered on two different occasions at COVID vaccine events at the Hartville Migrant Ministry health clinic, which is a migrant health

clinic that operates as part of a small Christian nonprofit in Northeastern Ohio. Like the Community Health Services clinic, this clinic is on the property of a grower, and near many large farms (some, but not all of which employ H-2A workers). Again, the participant observation gave me a chance to interact with and become more familiar with the farmworker population in general and to observe firsthand the process of providing care to this population.

I also conducted semi-structured interviews with employees at the Ohio Department of Jobs and Family Services (ODJFS) who are in charge of administering the program, a lawyer and a paralegal with a legal aid organization, directors of various non-profits that provide support services for migrant farmworkers, and employees with the Department of Labor, including the community outreach coordinator and a senior policy analyst. Some of these interviews were done virtually, while others happened in person.

From these conversations, and my participant observation in the virtual monthly FALCON meetings and the meetings held by the Ohio Department of Health about coordinating a COVID

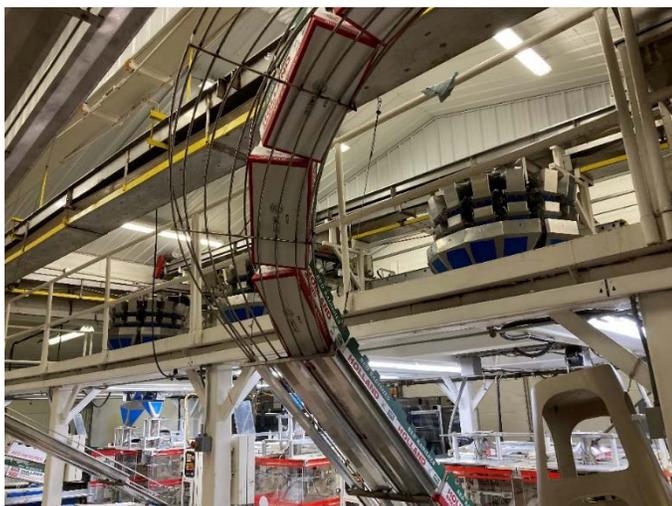


Figure c: a radish packing machine at the Buurma Bros. Farm



Figure d: Anisa & La Virgen, Hartville Migrant Ministry's COVID Vaccine Clinic

vaccine effort for farmworkers, a few key themes emerged.

First, mobility is the primary challenge for this population. They simply can't go places on their own and are therefore more isolated, hidden, and difficult to reach as a population. For example, the Hartville Migrant Ministry, which serves both H-2A and traditional migrant farmworkers, puts out free loaves of bread once a week for workers to pick up. The farm that employs H-2A workers does not permit them to make this excursion and so a volunteer must bring the bread to them. This kind of isolation directly affects healthcare access and the general perception is that no one knows how their health is because they're not showing up in clinics. Family separation is the other big challenge, which has significant effects on the workers' mental health and general wellbeing.

Another theme is labor control. For a variety of reasons, people feel that H2As' movements are more constrained by their supervisors (above and beyond the questions of mobility) and they are also less likely to complain about poor working conditions or wage theft than other migrant and seasonal agricultural workers. For example, the grower I spoke with told me that the FLC he hired told his workers they were not allowed to play soccer during their time off, since the worker might

injure himself and the FLC would have to pay to transport him back to Mexico without having realized a return on his investment in bringing the worker here. The director of the Immigrant Workers' Project told me that when a worker complains or quits he is often taken off "the list" of potential H-2A workers. However, in order to discourage further legal action, the employer will sometimes hire a relative of the erstwhile employee, and make it known that if the complaints continue, that relative will also lose their job.

I heard anecdotes from different sources about H-2A workers being denied healthcare by their employers (be it the grower or the Foreign Labor Contractor who is supervising them). In one case, a worker had attended a health clinic, gotten a vision screening and learned he was eligible for a free pair of glasses. However, he was never able to actually receive the glasses because the FLC refused to take him to the clinic to pick them up. In another case in

Date	Dose 1	Dose 2	TOTAL
5/13	56		56
6/10	70	52	122
7/8	21	68	89
7/29	17	20	37
8/19			



Figures e and f: Signs at the Hartville Migrant Ministry's COVID Vaccine Clinic

southern Ohio, a handful of workers had gotten ill but the grower refused to take them to the doctor. Finally, when one worker's condition worsened, the grower called his own family physician and requested that the doctor basically make a house call. Upon examining this worker, the doctor said he needed to be taken to the hospital and also warned the grower that he needed to provide more water and adequate breaks to his crew. Finally, one stakeholder, who also serves on the National Advisory Council for Migrant Health shared that when hearing testimony from H-2A workers across the country, one worker reported that a friend had gotten ill while working in the US, but was not allowed to go see a doctor. He worked through the season, intending to see a doctor when he returned home, but by then it was too late and the man died soon after returning home.

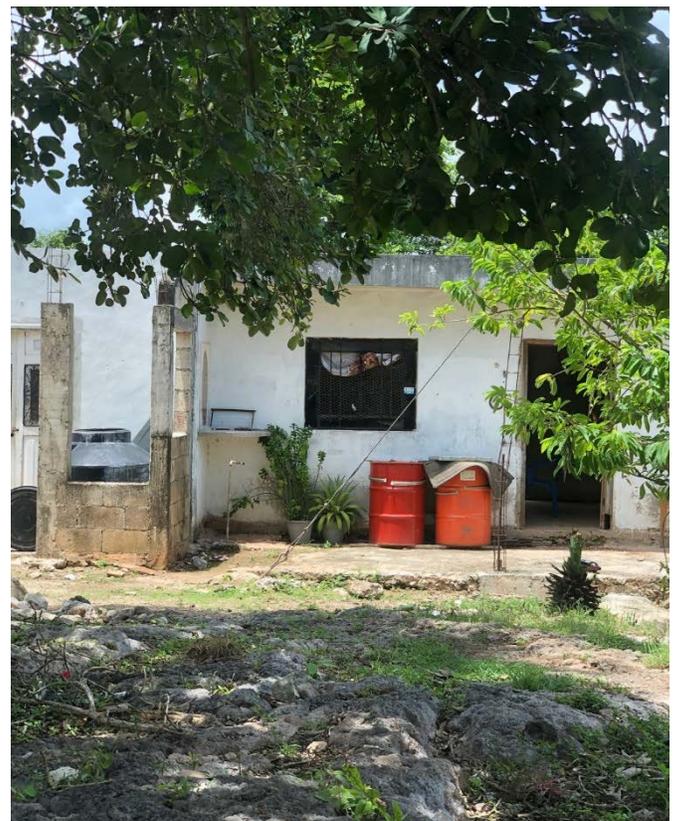
Although this is just anecdotal evidence, these conversations indicate that the H-2A workers do indeed face significant obstacles when trying to receive care. I believe this is just the tip of the iceberg so to speak- information gleaned over the course of one summer with a small sample of stakeholders. For me, it provides compelling motivation to continue this research, and points to the importance of conducting surveys and interviews with the workers themselves, which will be the next phase of my project.

Courtney Mathers, University of Denver

Project: Soil quality indicators related to soil resilience: how to better inform climate change mitigation and adaptation strategies in Maya milpa management

I was able to accomplish my fieldwork goals this summer thanks to the CLAG field study award. I conducted my fieldwork in the state of Yucatán, Mexico, where I interviewed Mayan smallholder farmers and collected soil and maize root samples.

My master's thesis project seeks to compare Mayan agricultural management practices and their impacts on soil fungi. My project focuses on arbuscular mycorrhizal (AM) fungi for several reasons. First, AM fungi are prevalent in agricultural contexts; these fungi form symbiotic relationships with nearly all crop plants worldwide. AM fungi colonize crops by entering through a plant's roots where they exchange essential plant nutrients for carbohydrates. By providing plants with greater access to phosphorus and other macro and micronutrients, these fungi can survive on carbon sourced from their plant host. In addition to this trade system, AM fungi can provide an array of other benefits to their hosts such as increased resistance to pests and disease and increased access to water in the soil. However, these benefits are not always straightforward, especially in the agricultural context. With the application of inorganic fertilizers, crops are less motivated to trade carbon to the fungi because they have access



These orange bins outside of the house are where compost for a milpa is produced using kitchen scraps and other organic amendments.

to ample nutrients. My project seeks to understand this change in symbiosis and its impacts on soil in Mayan milpas. The traditional milpa model of rainfed polyculture has, in many cases, been adapted to include the use of agrochemicals. I hypothesize that in milpas where agrochemicals are applied, AM fungi will have lower colonization levels and will thus not provide other important plant and soil benefits.

When I arrived in Mérida, I rented a car using my award funds. With this rental, I was able to drive from Mérida out to small towns where rural Mayan communities use a range of milpa practices. I traveled to towns on the outskirts of the Reserva Estatal Geohidrológica Anillo de Cenotes, namely: Tabí, Yaxcabá, Sotuta, Muna, and Santa Elena. In these areas I met with locals and was able to locate farmers with milpas that fit my project's target variables. Finding milpas that fit my criteria took a lot of coordinating with these locals, and it would not have been possible without reliable transportation. After finding the desired milpas, I met with farmers in their fields or in their homes when invited in. There I interviewed them about the practices they use, including the types of agrochemicals used and when/how often they apply them. With their permission, I then collected soil and maize root samples. I bought a cooler using CLAG funds, and I stored the samples in this cooler before taking them back to a refrigerator in Mérida. Given the hot and humid weather in the Yucatán,

keeping the samples with living fungi cool was imperative.

While the car rental and cooler were essential to conducting my fieldwork, my favorite things that I spent CLAG funds on were food. I was able to try many local dishes like cochinita pibil, papadzules, and panuchos. After spending long, hot days out in the milpas, sitting down to eat in town or often at a farmer's house was a wonderful way to see how crops grown in the milpas are utilized in the kitchen. In conversations shared during meals, I learned a great deal from farmers about everything from their perceptions of climate change, their views on "traditional" milpas and changing farming practices, and how they felt about teaching their children to speak Mayan dialects.

These conversations and my fieldwork really made me feel grateful to be a geographer. It was a great privilege to learn from those who have such an intimate knowledge of and respect for their agroecosystems. The field study funds from CLAG not only allowed me to collect data for my thesis, but more so, permitted me to gain a deeper understanding of my study area and its rich culture. While my research project is ecologically focused on soil fungi and crop benefits, my interviews and conversations are important to understand what drives and influences the decisions that farmers make in their milpas. This more nuanced view will undoubtedly help to shape my approach to



Me (Courtney Mathers) standing in a milpa very happy to have my hands full of soil samples



A typical milpa with intercropped maize, squash, and beans.

conducting interdisciplinary and applied research in the future. In the short-term, the CLAG field study award was essential to allowing me to collect data for my thesis research. In the long term, the experiences I had during my fieldwork have motivated me to continue to pursue a career in research that seeks to improve human-environment relationships with solution-oriented research.

Abstract

Keywords: smallholder agriculture, milpa, Yucatán, arbuscular mycorrhizal fungi, glomalin

Arbuscular mycorrhizal fungi (AMF) are components of the soil microbial community that are essential to resilience in agroecology. AMF provide a host of benefits to crop resilience such as increased water retention in the soil, decreased plant pathogens, and increased availability of nutrients, particularly phosphorus. In addition, AMF are the sole producers of the glycoprotein glomalin. Glomalin is responsible for a large percentage of the carbon that is stored in soil through processes of soil aggregation. The influences of management practices on AMF communities are of increasing interest to address the resilience of agroecological systems to climate change impacts. Research on AMF and glomalin dynamics are still lacking in many areas, particularly in the context of indigenous agriculture.

This research analyzes differences in AMF properties between traditional and more intensive forms of agricultural management in Mayan milpas in Yucatán, Mexico. In small Mayan towns south and southeast of the Reserva Estatal Geohidrológica Anillo de Cenotes, ten soil samples and maize roots were collected at random from ten rainfed milpas. A 5 m buffer was used when sampling to avoid edge effects. Milpas included in this study were all planted at the start of the rainy season with maize, squash, and legumes.

Prescribed burns and the use of agrochemicals were the two selected independent variables in this study. AMF characteristics and soil properties will be analyzed to compare differences in overall indications of soil resilience between the traditional and more intensive forms of management practices. AMF analyses will include the following: percent maize root colonization of AMF, AMF spore density, and concentration of glomalin related soil protein (GRSP). Soil properties being analyzed include percent soil organic carbon, pH, electrical conductivity, aggregate stability, and particle size analysis.

This extended abstract is not yet extended out to include my results and a discussion of those results because I am currently running the aforementioned analyses. I plan to present my preliminary findings in January.



Holding maize roots that will be used for analysis of arbuscular mycorrhizal fungi colonization.



A common sight in fields where agrochemicals are used.

Sophie Williams, MS Student, The University of Alabama Department of Geography

Project: Change Detection and Marine Management in South Water Caye Marine Reserve, Belize

Abstract

The South Water Caye Marine Reserve (SWCMR) off Belize's southern coast contains the largest unbroken stretch of the Belize Barrier Reef as well as many small mangrove islands, patch reefs, and seagrass beds whose diverse ecosystems sustain myriad threatened, recreational, and subsistence fisheries. This mixed-methods study combines a remote sensing land change analysis with a content analysis of the reserve's management plans to characterize changes and management strategies that shape the area in and around the SWCMR. The first component of the study is a hybrid classification of remotely sensed data and change analysis performed in ERDAS Imagine and ArcGIS. Images obtained from Planet's CubeSat satellites between 2010 and 2020 divide the area into its constituent habitats, and a change analysis of the result shows how the ecosystem composition has varied inside and outside the reserve over ten years. The second project component, a content analysis of the SWCMR's management plans, identifies observed drivers of change in the reserve and provides causal context for results of the change analysis. Results establish a baseline for change dynamics and development in Belize's little-studied

southern waters and evaluate current management strategies and development in the SWCMR. Understanding the changes occurring in this protected area will provide valuable information for future management and conservation decisions that affect Belize's valuable marine biodiversity.

Keywords

Change Detection, Belize, Remote Sensing, Content Analysis, Ground Truthing

Background and Objectives

The Belize Barrier Reef is the largest barrier reef system in the Western Hemisphere, and its varied ecosystems and biodiversity has been recognized on a global scale since it was named a World Heritage Site by UNESCO in 1996. Seven marine reserve systems cover various parts of the barrier reef and serve as habitat for many threatened species and important fisheries. Manatees (*Trichechus manatus*), tarpon (*Megalops atlanticus*), queen conch (*Strombus gigas*), and magnificent frigatebirds (*Fregata magnificens*) are just a few of the species of interest that call the reef home (Meerman 2005; Palomares and Pauly 2011; Zeller and Gillet 2003).

The South Water Caye Marine Reserve (SWCMR) is located in southern Belize and covers 47,702 hectares of the barrier reef (Meerman and Clabaugh 2009). It is populated with diverse mangrove islands and seagrass beds whose sensitive marine and terrestrial ecosystems may



Sophie Williams takes GPS points along the edge of benthic seagrass and mangrove habitats, a boundary that can be difficult to delineate in a satellite image.



Sophie Williams records data in the midst of a small mangrove island.

serve as indicators of the health of the surrounding aquatic and terrestrial areas (Baldacchino 2007; Vergilio et al 2017). This interconnected mosaic of small landscapes is particularly vulnerable to ecological, environmental, and anthropogenic changes that accumulate over short and long periods of time. It is important to document and quantify change in these sensitive environments to understand its effects.

My research blends qualitative and quantitative approaches to quantify changes in water and land cover in the reserve over the past ten years. A land use land change assessment of remotely sensed imagery and a content analysis of the SWCMR's management plans over the past ten years will measure environmental and anthropogenic changes and see how they may be manifesting themselves on the ground in management practice. This will allow me to resolve the questions: (1) how much has the water and land cover in the SWCMR changed in the last ten years?; (2) how much of this change may be due to anthropogenic influence?; (3) does development meet marine reserve guidelines, or does it reflect illegal development? The answers will provide insight into change dynamics and human-environment interactions in the area, help evaluate management strategies in marine reserves, and establish a baseline study for change dynamics in this area.

Fieldwork Experience

In August 2021 I traveled to the SWCMR in Belize to gather ground truth data that will support my remotely sensed water and land cover analysis. Data collection was carried out over four days in the field. With South Water Caye as my home base, I traveled out to a different location in the reserve each day, stopping at random points along the way to gather GPS points representing the different land and water cover types that I hope to measure: benthic seagrass, water, barren areas, vegetation, and developed areas. From the Blue Ground Range to Coco Plum Caye, I gathered point data from the boat, waded through shallow seagrass beds and sandbars, and climbed through red mangrove islands to reach a wide variety of points. I

occasionally snorkeled some locations to verify the submerged cover—whether the bottom of the ocean held seagrass, sand, or coral.

The result is over 200 points of verified ground truth data that I will incorporate into several steps of my remote sensing change analysis to make it more accurate and informative. Some points will be used to help train the computer algorithm that will automatically classify the area into its different habitat types, so that the algorithm will better be able to distinguish between land cover types. Other points will be used to test the accuracy of the classification once it has been performed. Grounded in reality, the data will help me create a solid foundation upon which I can apply remote sensing technology to provide insights into past change patterns in this protected marine reserve.

Beyond its practical applications to my master's thesis, this field experience transformed my relationship to fieldwork and my study area. It was the first time I could see the reserve all around me instead of from above in the static satellite images I chose for my project. I could observe small day-to-day changes in the reserve firsthand, and it gave me insight into long-term changes I hope to measure during project analysis. Being in the field guided only by my own protocol and research questions also strengthened my confidence as a scientist and in my ability to successfully carry out standard protocols in a new environment. All in all, the experience only deepened my desire to get to know the dynamics of tropical coastal ecosystems and share them with others.

Acknowledgements

Many thanks go to CLAG for helping make this trip possible. The Field Study Award helped offset boat travel and lodging expenses while in Belize that were vital to maximizing the amount and type of data I gathered. Acknowledgements are also in order to Michael Steinberg and Jordan Cissell for their support along the way, as well as the wonderful owners and staff of Blue Marlin Beach Resort, who drove me through the SWCMR and shared their expert knowledge of the area.

NOTE FROM THE CLAG COMMUNICATIONS COORDINATOR

Dear CLAG!

While we all just missed each other this month and in the last few months plenty of energy was moving through this organization as part of the planning process for Tucson, from the perspective of CLAG communications this year was for the most part routine. Our membership system is ticking along and the website requires regular but fairly minimal maintenance. On the other hand, highlights include the pleasure of working with Jim Biles and the team behind Live CLAG and to coordinate with Margaret Wilder and the conference organizers in Arizona. I am also pleased to draw your attention to the JLAG download statistics now on clagscholar.org. Just this

month I succeeded in making these statistics fully automated and there is a now growing database of JLAG publications on the server backend; perhaps someday to be merged with the JLAG editors' long standing and living document of the [51 years of CLAG publications](#). I look forward to the coming year and hope that all of our paths cross soon.



Kind regards
Timothy B Norris
University of Miami Libraries

NOTE FROM THE NEWSLETTER EDITOR

Like many of my fellow CLAGistas, I am very disappointed we were not able to meet in Tucson! I was looking forward to learning more about our collective research efforts, reconvening with old friends, and making new ones. Despite this setback, I am inspired to see my colleagues and the next generation of CLAG student scholars returning to fieldwork (see details in this issue!), and am certain will be able to hold our conference in January of 2023.

Perhaps our continued limited ability to meet in person makes our newsletter that much more important. I want to thank all of you who took the time to submit your students and your own publications, news, and awards. Without your support, the newsletter would be impossible. I know

it can be hard to promote your own work and achievements, but it benefits us all, so please (continue to) contribute to the production of this newsletter.

I would like to thank my co-editor Mei Yang whose support allows me to fulfill this role for our organization, and CLAG's leadership for the excellent job they continue to do in these trying times. While it seems difficult at times to be optimistic, the future of CLAG is bright and I am glad to be part of it!

Sincerely,
Jennifer A. Devine
CLAG Newsletter Editor



Jennifer A. Devine



Mei Yang

OTHER NOTEWORTHY ACTIVITIES

MAPS

1993 Darién (Panamá) participatory maps back online;

Cabécar Indigenous Reserve map (Costa Rica)

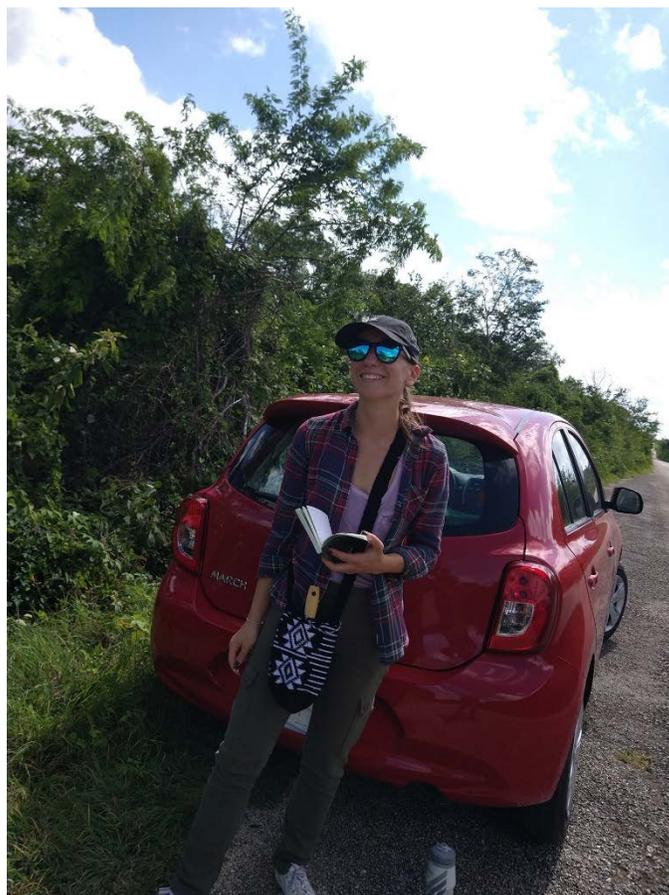
The Centroamérica Indígena website has re-established access to maps produced in 1993 of “Indigenous Lands of Darién: Subsistence Zones”, a pioneering participatory research mapping project ([link here](#) – index map page) coordinated by Peter Herlihy (now U of Kansas), with diverse collaborators including the Instituto Geográfico Internacional Tommy Guardia, the Centro de Estudios y Acción Social Panameño, and the Comarca Emberá Wounaan. The access was temporarily lost due to technical problems (the demise of Adobe Flash). This region has been in the news again recently, as Haitians and others hoping to resettle in the US have crossed it; perhaps some will find these maps helpful in understanding its human geography.

Elsewhere in the website is the 2019 map ([link here - PDF](#)) “Reserva Indígena Cabécar de Chirripó” (Costa Rica), the product of a four-year participatory effort by the Cabécar communities coordinated by Taylor Tappan (KU), Peter Herlihy (KU), Lilliam Quirós Arias (Universidad Nacional de Costa Rica), Marvin Alfaro Sánchez (UNA), and others.

GREAT PHOTOS OF LATIN AMERICA



Sign in front of the Department of Agricultural Science, Universidad Nacional de Ucayali, Pucallpa, Peruvian Amazon. Photograph by David Salisbury.



Courtney Mathers standing in front of the rental car before a day of fieldwork.



El Taquito de David, Colonia Juárez, Mexico City, Mexico, November, 2018. Photo by Ben Gerlofs.



Interior gardens, Hospital de Jesús Nazareno (ca. 1524), Centro Histórico, Mexico City, May, 2017. Photo by Ben Gerlofs.



Boats in the port of Pucallpa, Ucayali River, Peruvian Amazon. Photograph by David Salisbury.



Maize root samples stored in ethanol back in the lab in Mérida. Photo by Courtney Mathers.



The maize here was toppled over due to Hurricane Grace that had passed over the area a few days prior. Photo by Courtney Mathers.