

# 45<sup>th</sup> Annual Conference of the Society of Ethnobiology

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**URBAN  
TRANSFORMATIONS**  
SOCIETY OF ETHNOBIOLOGY  
2024 CONFERENCE ST. LOUIS

St. Louis, Missouri  
April 24–27, 2024



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# ***Welcome to St. Louis!***

## **Conference Theme: Urban Transformations**

St. Louis is a place of intersectionality, evolution, and rebirths. It is a place of healing and restoring, both for people and landscapes. This year's theme reflects the dynamic history of our conference's location, and will be reflected in conference workshops, field trips, and sessions throughout.

## **Logo Description and Artist Biography**

The branding for the 2024 Society of Ethnobiology Conference was conceived as a modular system of simple yet expressive shapes by Arbolope Studio. Utilizing vivid colors and transparency, the interaction of these forms creates images that at once allude to animal forms (human and non-human alike); wild, cultivated, and cut plants; fungi; waterways; and even the built environment.



**Arbolope Studio** is an award-winning landscape architecture, urban design and public art firm based in St. Louis, MO. Founded in 2015 by L. Irene Compadre. They create legible, technologically innovative, sustainability-minded, and deeply impactful designs that contribute to the development of a happier, healthier and more connected world. Working with a variety of clients including universities, institutions, and communities, at scales ranging from intimate parks to large-scale urban plans, Arbolope is driven by the direct relationships they nurture with diverse and passionate people who want to see their communities grow and thrive.

Involved with ongoing projects at the Missouri Botanical Garden for the last half decade, they were members of the design teams responsible for the new landscapes of the Jack C. Taylor Visitor Center, the Specimen Panels in the new Sassafras Cafe, as well as the soon to be completed renovation of the Linnean House, the oldest orangerie west of the Mississippi River. Learn more at [arbolope.com](http://arbolope.com).

## **Statement on Inclusivity and Diversity**

We strove to create ways to encourage a range of respectful voices at our conference. One way we did this was by dramatically increasing our waivers and scholarships, especially to encourage local, Indigenous participation. Another way was to create a conference space that is welcoming to diverse communities and does not allow discrimination. To this end, we require all conference presenters to abide by the [code of ethics](https://ethnobiology.org/about-society-ethnobiology/ethics)<sup>1</sup> adopted by our organization (<https://ethnobiology.org/about-society-ethnobiology/ethics>).

Please also note:

- There are gender-inclusive (single-stall) bathrooms in the conference venue.
- The conference venues are wheelchair accessible.
- There is a special, quiet space for Indigenous Elders and others who need safe space - Bayer Event Center West.
- There is a cozy space where children and their caregivers can congregate.
- We encourage attendance by caregivers; no registration fee is required.

## **Hybrid Conference**

The 2024 Annual conference will be completely hybrid. All virtual attendees will be able to present and attend conference sessions via Zoom. Off-site events like the banquet, student social will not be telecast or recorded.

All times are in Central Daylight Time Zone (UTC-5:00). To convert to your own time zone, see [Time Zone Converter](#)<sup>2</sup>

## **Creating a Space for Elders and Youth**

We have set aside spaces for our Elders and youth in the Bayer Events Center East. Please ask at the registration desk where they are located.

**Childcare Service:** We will have a child-friendly space that will be available throughout the day during the conference. The space will be an inviting atmosphere where kids of all ages (accompanied by a caregiver) can take a break. Coloring, crafts, games, storytelling, and more will be there to help your child(ren) have a great experience at the conference. The Missouri Botanical Garden has generously offered free passes to the Children's Garden for conference attendees' children and caregivers.

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<sup>1</sup> <https://ethnobiology.org/about-society-ethnobiology/ethics> (Code of Ethics)

<sup>2</sup> <https://www.timeanddate.com/worldclock/converter-classic.html>

## **Recycling and Waste Reduction**

We recognize that the very gathering of people from distant places is counter to reducing our carbon footprint; we struggle with balancing this fact against the huge value of meeting with our community face-to-face. We also understand the value of small actions, even if they just empower us as individuals to take bigger and bolder actions. We thank the Missouri Botanical Garden for its commitments to recycling and composting. We have tried in this conference to reduce excess by doing things like reducing packaging, sourcing local and/or organic foods, using non-disposable or responsibly disposable cutlery and plates and cups, and video-recording some talks for people to remotely access them. We encourage all participants to pay careful attention to our recycling stations. We welcome suggestions on how our Society's conferences, and indeed our Society more generally, can be better global stewards.

## **Social Media Ethics**

To encourage this conference being a safe and inviting space for diverse voices and perspectives, we offer the following guidelines for respectful social media conversations:

- Only post content that represents your own thoughts.
- Act in a professional and constructive manner, especially regarding sensitive or meaningful topics.
- Show respect for others' opinions, and their rights to choose to participate or refrain from commenting in online discussions.
- Do not post presenters' ideas or data without the expressed permission of the presenter.

## **Our "Thumbs Up" Icon**



If you see this icon on the title page or poster of a presentation, it means the author(s) have given permission to post images of their presentation online. If you do not see this icon, approach the author and ask permission about posting any information or images associated with the author before you share any information.

When sharing images of presentations, please be sure to include attribution (author's name, affiliation; date).

## Accommodations and Shuttles Schedule

### Accommodations:

- **The Chase Park Plaza Royal Sonesta**  
212 N. Kingshighway Blvd, Suite # 27, St. Louis, MO 63108
- **Holiday Inn Express: St. Louis - Central West End**  
4630 Lindell Blvd, St. Louis, MO. 63108

### Shuttles:

Shuttle services will be available between the Chase Park Plaza Hotel and the conference venue, the Bayer Event Center of the Missouri Botanical Garden (MoBot). The hotel/lodging pick-up location will be in front of the **Chase Park Plaza Cinemas on Lindell Blvd.**, just around the corner from the main entrance of the Chase Park Plaza Hotel and about one block west of the Holiday Inn Express. We will also have shuttle service for the Thursday Student Social, and the Friday banquet. All attendees are encouraged to ride share with the shuttle.

**Info on children riding shuttles:** Children under 2 may sit on an adult's lap. The shuttles do not come equipped with car seats and car seats are not mandatory for children over 2, but if anyone wants to bring their car seat to strap in for shuttle rides, they are welcome to (just note that you will be responsible for safely securing the car seat).

### Shuttle Schedule

<b>WEDNESDAY, APRIL 24</b>	
8:00 AM 8:30 AM	Pick up at Chase Park Plaza; Drop off MoBot ~8:15–8:20 AM (first run); Drop off MoBot ~8:45 AM (second run) <i>Note: These are TWO single trips, one leaving Chase at 8 am and a second leaving Chase at 8:30 am.</i>
5:00 PM - 9:00 PM	Pick up at MoBot; Drop off at Chase Park Plaza*; continuous loop between Chase and MoBot until 9:00 PM (approximately 35–40 min round trip)

\*For the Opening Reception (location has changed to the Chase Park Plaza Hotel)

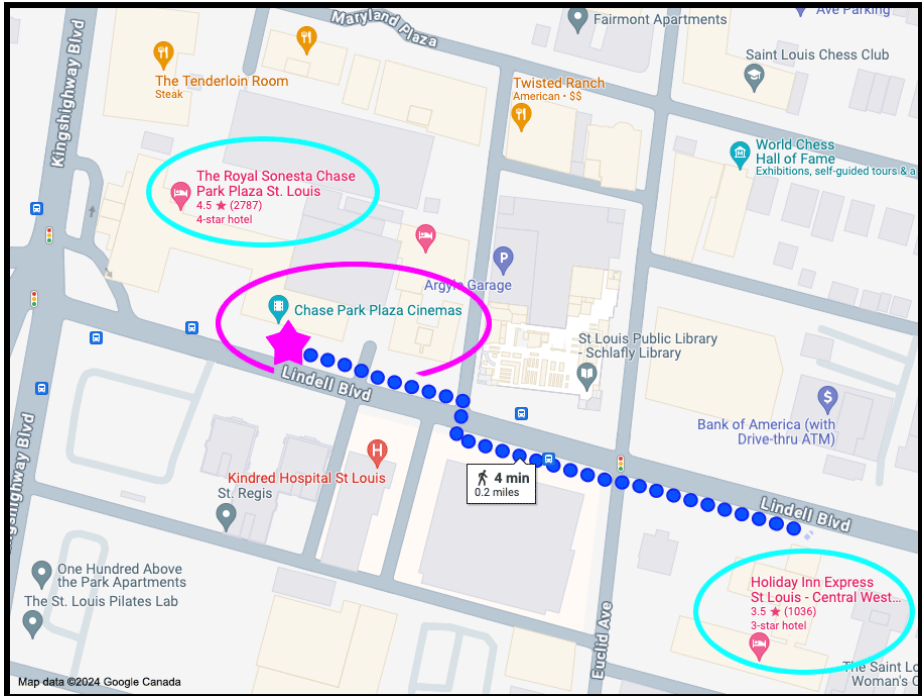


THURSDAY, APRIL 25	
7:30 AM - 10:30 AM	Pick up at Chase Park Plaza; Drop off MoBot ~7:45–7:50 AM; continuous loop between Chase and MoBot until 10:30 AM (approximately 35–40 min round trip)
5:00 PM - 8:00 PM	Pick up at MoBot; Drop off Urban Chestnut (Student Social); Drop off at Chase Park Plaza; Return to MoBot; continuous loop between MoBot, Urban Chestnut, Chase until 8:00 PM (approximately 40–50 min round trip)

FRIDAY, APRIL 26	
7:30 AM - 10:30 AM	Pick up at Chase Park Plaza; Drop off MoBot ~7:45–7:50 AM; continuous loop between Chase and MoBot until 10:30 AM (approximately 35–40 min round trip)
5:00 PM - 6:00 PM	Pick up at MoBot; Drop off at Chase Park Plaza; continuous loop between Chase and MoBot until 6:00 PM (approximately 35–40 min round trip)
6:00 PM - 10:00 PM	Pick up at Chase Park Plaza; Pick-up MoBot; Drop off William A. Kerr Foundation (banquet); Return to Chase Park Plaza; continuous loop between Chase, MoBot, and Kerr, until 10:00 PM (approximately 45–50 min round trip)

**ACCOMODATION PICK UP** →

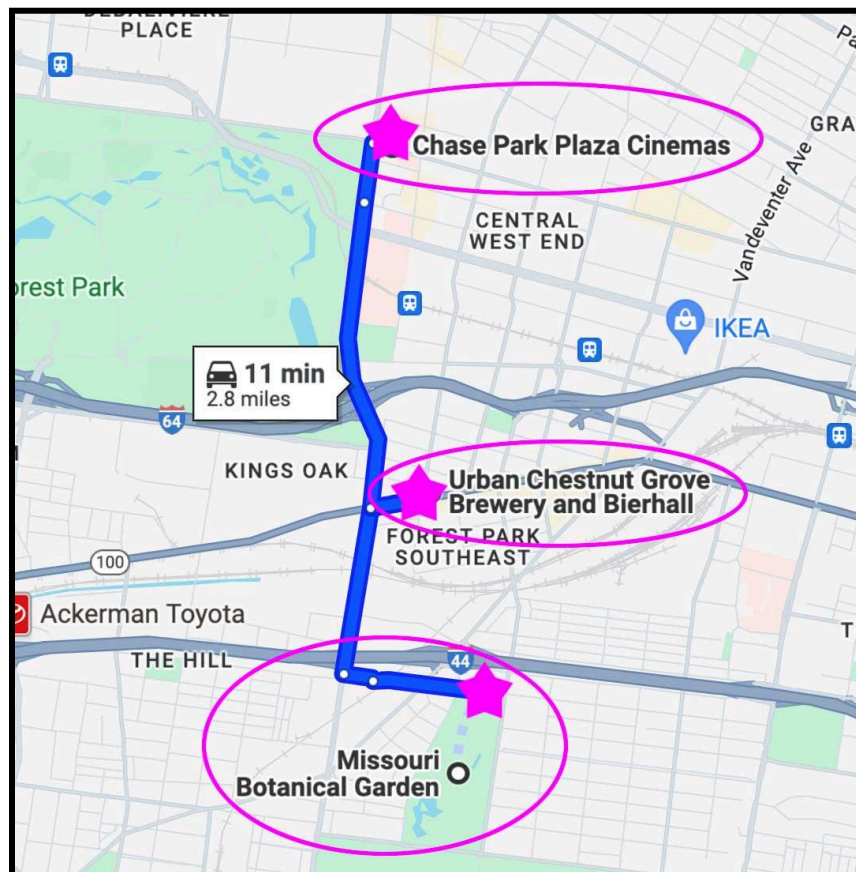
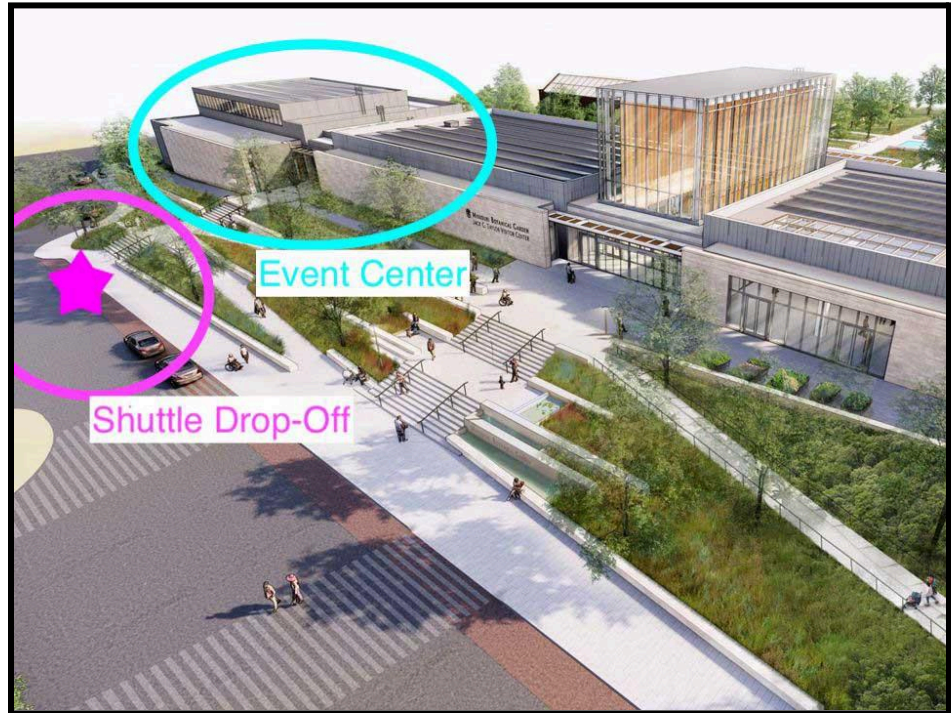
Shuttle pick-up location, Chase Park Plaza Cinemas (pink star), relative to Chase Park Plaza Hotel, and



Holiday Inn Express (circled in blue).

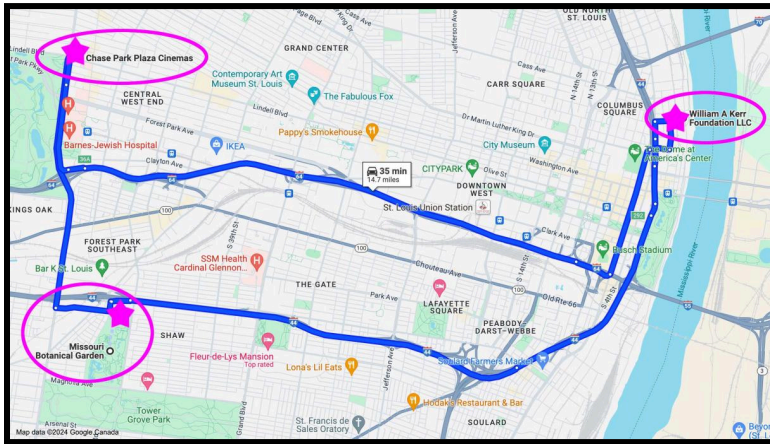
**MISSOURI BOTANICAL GARDEN**

Shuttle drop off location (pink star) at the Missouri Botanical Garden (MoBot – circled in blue).



**STUDENT SOCIAL**

Shuttle route from MoBot to Urban Chestnut (Student Social) to Chase Park Plaza.

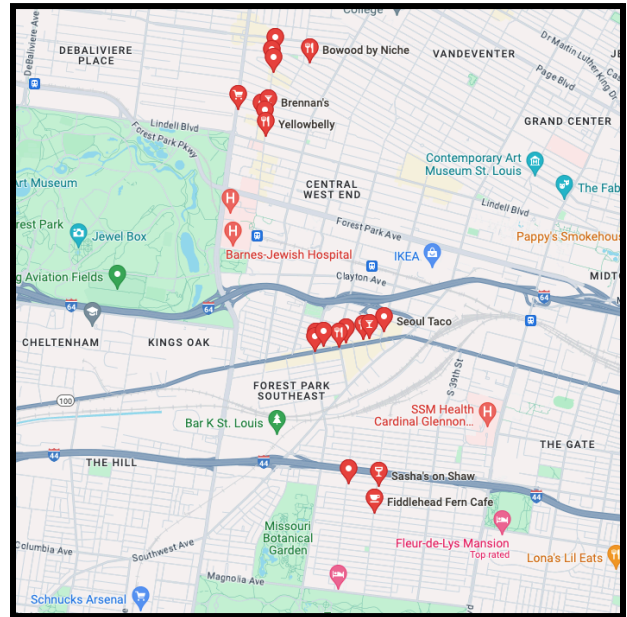


### ◀ BANQUET

Shuttle route from Chase Park Plaza to MoBot, to William A. Kerr Foundation, for Friday's (banquet location).

### St. Louis Dining<sup>3</sup>

Use the hyperlink above (URL in footnote) for recommendations to notable places to eat around the Conference Hotel and Missouri Botanical Garden



### ◀ St. Louis Attractions<sup>4</sup>

Review the map (hyperlink above, URL in footnote) of interesting places in St. Louis to explore during free time between conference events.

<sup>3</sup> <https://maps.app.goo.gl/KuJpakD7yAS69nrM6> (Dining)

<sup>4</sup> <https://maps.app.goo.gl/yKRqpDsLkFVfCmkM7> (St. Louis Attractions)

# Acknowledgments

## Land Acknowledgment

The Missouri Botanical Garden understands and accepts its responsibility to conserve and nurture the land on which it was established and upon which gatherings occur. The Garden and the Society of Ethnobiology recognize and honor Indigenous Peoples as the original stewards of this land and acknowledge that this gathering is located on the ancestral and unceded lands of the Osage, Missouri, and Illini people, who were removed unjustly, and that we in this community are the beneficiaries of that removal.

By recognizing Indigenous Peoples and their traditional homeland, we express gratitude for their enduring stewardship of the land and strive to create spaces for knowledge exchange, reflection, and action. We pay respect to and honor all Indigenous Peoples, past, present, and future, by building a more inclusive and equitable space for all. Their strength and resilience in protecting this land inspire us to uphold our responsibilities according to their example.

## Thank you

Gatherings occur through the multitudes of cooperation, guidance, and creation of many community members. Conference organizers want to highlight the crucial support and work offered by MoBot staff and community: **Sue Winkler, Crystal Joseph, and Sandy Lopez, tour guides and support staff.** Moreover, **student volunteers'** creativity and labor—both virtually and in-person—are invaluable for the creation and development conference. Their names are listed below:

Sewase Assefa  
Megan Belcher  
Bridget Bey  
Levi Cormier  
Cameron Dasher  
Qimeng Duan  
Fionna Fahey  
Isabella Hinrichs  
Rae Hoskins  
Han Jiang  
Yang Liu  
Elizabeth Orhuamen  
Babu Saheb Shaik  
SU Kai  
Ember Wolf  
Christina Youngpeter  
Jasmine Zenderland

# A Note From The President

Hi Everyone!

It is so wonderful to be reconnecting as our Society of Ethnobiology at the beautiful Missouri Botanical Gardens! We acknowledge with respect and gratitude that we are on the ancestral and unceded lands of the Osage, Missouri, and Illini people, who were removed unjustly from their traditional homeland, and we are grateful to our hosts at MOBOT and Washington University for welcoming us here. This is our first solo conference since the world collectively experienced a pandemic and it feels more important than ever to reconnect with other ethnobiologists, reunite with old friends, and form new relationships.

It is no easy feat to organize a conference, and sometimes the work involved can be overwhelming. It is therefore imperative to have people who care deeply about the Society and understand the importance of coming together at our annual conference. Over the past year, countless hours have been dedicated to planning every element of this conference and we are incredibly indebted to the team that put it all together: Ashley Blazina, Cheryl Takahashi and Annalee Sekulic from the SoE board and our local partners Robbie Hart, Kate Farley, Ashley Glenn, and Natalie Mueller. In addition, we are grateful to Denise Glover and Mac Marston (past and current treasurers) who stepped in and helped with conference finances. Enormous thanks to generous volunteers who are helping to keep things running throughout the week and to those adding to the ethnobiological learning opportunities of this conference through their contributions to the Wednesday workshops, tours, Saturday field trips and Friday night banquet. Please take a moment to show them your appreciation when you interact with them this week.

This has been an exciting year for SoE, as we have started collaborating in working groups that keep members of our Society closely connected throughout the year. Through these groups, we have focused on engaging with current members of our society as well as with Indigenous and international partners who are actively involved with ethnobiology. We'd like to thank Kali Wade, Cissy Fowler (Past President), Zoe Antoinette, Florenica Pech Cardenas, Ricky Rietjens, Samantha Bosco, Liz Olson (Past President and European Ambassador) and Scott Herron (Past President and Indigenous Ambassador) for dedicating much time and energy into these endeavors, especially through the Engagement Committee. The working group structure allows all of those who are interested in getting more involved with SoE to do so, and I would love to have more of you join us on a committee.

At last year's conference, student members of SoE who attended our business meeting expressed an interest in getting more involved. It was truly remarkable to see the dedication and excitement that they had to launch our first Student Board and they have done such a great job of engaging undergraduate and graduate students through meetings, newsletters, social media and webinars. Enormous thanks to Saish Solankar, Christina Youngpeter, and Florenica Pech Cardenas for your involvement in creating and leading this student board. The student board is open to all undergraduate and graduate students who are looking for their professional home and offers a great opportunity to grow with SoE.

One of my favorite parts of being a part of this professional family is that we collectively support grants, scholarships and fellowships to enable people from all backgrounds to continue their important work and to join us as members and attend our conference. In addition to our scholarship and fellowship programs that support undergraduate and graduate students, we are happy to also offer poster awards and the Barbara Lawrence Award for best student research

presentation, travel scholarships, and conference waivers. Great thanks go to Michelle Baumflek, Samantha Bosco, and their teams of scholarship and fellowship review committees. We are pleased that this past year, we have brought back our Rapid Assistance Fund for Indigenous Communities & Individuals in Need to offer financial assistance to individuals and communities who identify as Indigenous, Native, First Peoples, or as historically oppressed by colonization for urgent needs related to the field of ethnobiology. Thank you, Kali Wade, for your passion for this fund and organizing the review committee. In addition, we have initiated a Communities and Ethnobiology Grant given to a community involved with an ethnobiology-related project local to that year's annual conference. It is a means through which the Society of Ethnobiology can give back to the community hosting us and support important work being done at the local level. This year, the award goes to Dail Chambers, a St. Louis based artist and community activist with both Black and Indigenous heritage who works to reclaim and re-invigorate neglected urban spaces.

Sharing our ethnobiological research, perspectives, and information to the greater community is so important and we are thrilled that our *Journal of Ethnobiology* is now published by Sage Journals and has a 2.9 Impact Factor. We are also actively expanding the collection of ethnobiology literature through the gold, open-access *Ethnobiology Letters* periodical and the *Contributions in Ethnobiology* monograph collection. We are indebted to the great talent, energy, and time that the editorial team for all these publications share with us and invite you all to share your own research through our publications. Ricky Rietjens is doing a terrific job as our social media liaison when we have 6.8K followers on Facebook, over 1900 on Instagram, and 3000 on X. We'd love you also to follow us on LinkedIn and subscribe to our YouTube channel.

Last, but certainly not least, I thank the executive committee and our Office Manager who help keep the Society running. SoE's power is generated in large part through Cheryl Takahashi's, careful attention, patience, and support. Alex McAlvay is wrapping up his time as secretary, and we are grateful for the many years that he has served this board, starting from when he was SoE's Undergraduate Ethnobiologist awardee. Mac Marston's fantastic attention to detail, trustworthiness, and kindness make him the best treasurer we can ask for. And, I can't thank Steve Wolverton enough for being the best SoE partner, friend, and VP I could ever ask for. I will always be grateful for the countless days over the many years he has brought me support, joy, laughter, and warmth, and look forward to the many more years of collaboration to come.

Thank you, everyone, for being part of our professional family. I have often heard that it is the feeling of belonging that keeps people engaged with SoE and I hope that you all feel connected to this amazing community and that our time together over the next few days will leave you with beautiful memories, new friends, and inspiration to continue to do great work.

All the best,



Daniela Shebitz

## About The Society of Ethnobiology

The Society of Ethnobiology is a nonprofit professional organization dedicated to the interdisciplinary study of the relationships of plants and animals with human cultures worldwide, including past and present relationships between peoples and the environment. Our interests encompass ethnobotany, ethnozoology, linguistics, paleoethnobotany, zooarchaeology, ethnoecology, and other related areas in anthropology and biology. We are committed to scholarly research and to inclusive relationships with communities with whom we work and with colleagues around the world. The Society of Ethnobiology hosts an annual conference with field trips, and offers three peer-reviewed publications: the *Journal of Ethnobiology*, a professional journal with two issues per year, *Contributions in Ethnobiology*, a digital monograph series, and *Ethnobiology Letters*, a digital publication for short contributions. We award excellence in ethno-biological research through our Distinguished Ethnobiologist Award, and Best Poster Award, and also recognize student research excellence through the Barbara Lawrence Award and the Undergraduate Ethnobiologist Award.

Want to know more about the Society? Be sure to come to the General Membership Meeting on Friday April 26 from 3:30–5:00 pm in the Meeting Room at Bayer Event Center!

### Society Officers

President	Daniela Shebitz
President-Elect/VP	Steve Wolverton
Treasurer	John M. Marston
Secretary	Alex McAlvay
Board Members	Cynthia "Cissy" Fowler Kali Wade Zoë Eddy Florencia Pech-Cárdenas Ricky Rietjens Saish Solankar Michelle Baumflek Samantha Bosco Maria Bruno Liz Olson Scott M. Herron

### Conference Coordinators

Local Hosts	Kate Farley Ashley Glenn Robbie Hart Natalie Mueller
SoE	Ashley Blazina Annalee Sekulic Cheryl Takahashi

# Awards and Fellowships

## Distinguished Ethnobiologist Award

**Dr. Harriet V. Kuhnlein** (Founding Director of the Centre for Indigenous Peoples)



Nutrition and Environment (CINE) and Emerita Professor of Human Nutrition in the Faculty of Agricultural and Environmental Sciences, Macdonald Campus of McGill University, Montreal, Canada. Dr. Kuhnlein received her Ph.D. from the University of California, Berkeley, and holds an honorary Doctor of Laws degree from The University of Western Ontario. She is a Fellow of the American Society of Nutrition, an Honorary Member of the Nutrition Society of Canada, and a Fellow of the International Union of Nutritional Sciences (IUNS). Dr. Kuhnlein has been chair and co-chair of the IUNS Task Force on Indigenous and Traditional Food and Nutrition and was instrumental in the establishment of the United Nations Food and Agriculture Organization's (FAO) Global-HUB on Indigenous Peoples' Food and Knowledge Systems.

Her participatory research with Indigenous Peoples' food and nutrition began with the Hopi in 1974 and continued from her locations among the Coast Salish of Western North America and the Haudenosaune in Quebec. She has worked with more than 40 Indigenous cultures in the US, Canada and other parts of the world. Dr. Kuhnlein led research and publication of more than 400 articles, book chapters/proceedings and abstracts. In partnership with FAO, she has contributed to international case studies published and on-line at the FAO Indigenous Peoples' repository of knowledge. With recognition as a Fulbright Specialist and several national and international awards Dr. Kuhnlein's work continues with Indigenous Peoples to document food resources and surrounding knowledge and how this essential biocultural diversity must be protected and sustainable to enhance health and well-being.

## William L. Brown Award



The William L. Brown Award recognizes the outstanding contributions of an individual in genetic resource conservation and use. Awardees, over the last two decades, have included conservationists, plant explorers, crop breeders, ethnobotanists and policy makers.

**Jane Mt. Pleasant** (Associate Professor Emeritus of Horticulture, Director of American Indian Studies Program, Cornell University)

Mt. Pleasant served as Associate Professor of Horticulture and Director of American Indian Studies Program at Cornell University over several decades. Her research focuses on Indigenous cropping systems, plants and human well-being. Over her career, she worked tirelessly to



revitalize interest in the Iroquois tradition of growing food through polyculture, particularly the 'Three Sisters' system of corn, beans and squash. In her pioneering work, Mt. Pleasant has blended Indigenous knowledge with Western science, fostering a deeper understanding of sustainable farming practices and promoting the crucial role of Native American communities in the field of sustainability science.

## Undergraduate Ethnobiologist Award

**J.T. Michel** (Biology and Anthropology Major at University of the South)



J.T. is currently a senior at Sewanee: The University of the South studying Anthropology and Biology with a concentration in Ecology. He is also a Block Herbarium Fellow and the Student Curator in the Sewanee Herbarium, and serves as the Co-Director of the Farm Club. Both student organizations share a goal of connecting students to botanical knowledge through academic and applied lenses. In addition to his curricular programs, J.T. works at a local non-profit, Growing Roots, whose aim is to increase community wellness and food access in the local area through fostering community garden spaces. One of the primary gardens, the Native Plant Space, that he supports through his work is an educational garden that is focused on restor(y)ing the Cumberland Plateau with Indigenous perspectives through collaborations with Cherokee storytellers surrounding native plants.

## Communities and Ethnobiology Grant

ABOUT THE ARTIST *Dail Chambers*

— ABOUT THE —  
— ARTIST —



Dail Chambers is a visual artist, creative consultant and grower. Her visual art practice is a multimedia exploration in genealogy, women's narratives and social environmental art. She has received numerous awards and fellowships throughout the United States. As a homeschooling, teaching artist she has traveled internationally, creating curriculum lesson plans to enhance and motivate inter-generational learning environments.

This is a monetary award given to a community involved with an ethnobiology-related project local to that year's annual conference. It is a means through which the Society of Ethnobiology can give back to the community hosting us and support important work being done at the local level. This year's awardee will be accepting their grant award and presenting their work at the Opening Ceremony on Wednesday, April 24. We look forward to and thank them for sharing their community work with the Society!

### Dail Chambers

[Dail Chambers](#)<sup>5</sup> is an artist and community activist with both Black and Indigenous

heritage who works to reclaim and re-invigorate neglected urban spaces. She is currently the steward of an urban farm project in north St. Louis on properties that had formerly been vacant lots. The urban farm features useful native Midwestern plants and shrubs as well as vegetables and medicinal herbs, which are regularly shared with local community residents. North St. Louis is a region that has been deemed "blighted" due to low incomes, high crime, and high numbers of vacant buildings—the result of a long history of redlining and institutional racism. With this urban farm, Dail hopes to improve the quality of life in her neighborhood from the ground up by providing access to healthy food, creating a social hub, and by turning a vacant lot into a peaceful and beautiful space. In addition to her urban farm work, Dail also has an active visual art practice and teaches workshops in wellness and sustainability.



## Citation for Distinguished Service

The new Citation for Distinguished Service award recognizes ethnobiologists who have served the Society and its members in indispensable ways over many years. The recognition highlights the contributions of service leaders whose work, often behind the scenes, has been vital to the Society. Members of the Executive Committee may select up to three recipients on an annual basis. Recipients of the Citation for Distinguished Service are recognized at the annual conference.



### Denise Glover

I first became involved with the Society of Ethnobiology in 2001, when I presented one of my first papers on classification of plants in Tibetan medicine at Fort Lewis College in Durango. But my heart and soul really became linked to SoE when we hosted the annual conference at the University of Washington--Seattle in 2003. Several other graduate students and I assisted Gene Hunn with coordination, organization, and other volunteer work. I even drove one of the University vans for our fieldtrip up over Snoqualmie Pass to eastern Washington. I'll never forget when Cecil Brown asked me "So, how long have you been driving these vans [thinking I must have been hired help]?" to which I replied, "Oh, about 15 minutes" to which his eyes widened in concern! But we made it just fine (I took the responsibility of transporting some of my ethnobiological heroes very seriously) and my eyes were opened to the depth of knowledge our fieldtrip co-hosts James Selam and Gene Hunn shared with us all about the land and various species living in the area of native Sahaptin speakers. I was hooked.

It's been my honor to serve the Society. I was Conference Coordinator from 2009–2014, I was Treasurer from 2014–2020, and I currently serve as an Associate Editor for the Journal of

Ethnobiology. The Society has been my extended family, where I have been able to grow and mature as a scholar and a person. For those reasons, I have treasured relationships in SoE and I have dedicated myself to its causes (and I even wrote a song about ethnobiology and the Society!). There is no other group of people (and academics with heart) that I would rather hang with.

I am currently a Lecturer in the Department of Anthropology at the University of Washington, where my foundational love for SoE began all those years ago.

### **Ginny Popper**

The Society of Ethnobiology is near and dear to my heart. Dick Ford first told me about the Society when I was a graduate student at the University of Michigan. I attended my first conference in 1981 at Columbia, Missouri and gave my first paper at the 1984 conference.

I served as Secretary/Treasurer of the Society 1999–2002, when I put renewal notices into a mailbox and I tediously dialed credit card numbers into the phone to process payments. Heather Trigg and I co-edited the Journal from 2008 to 2013.

The Society played a formative role in my development as a paleoethnobotanist. I loved the intimacy of the meetings, where my colleagues became my friends. Listening to papers on ethnobotany and linguistics broadened my research approach. Senior researchers were extremely generous with their time and advice as I navigated these new disciplines. I'm grateful to the Society for all it has been to me, and still is.



### **Heather B. Trigg**



Currently, I am a Research Scientist at the Fiske Center for Archaeological Research at the University of Massachusetts Boston, and Graduate Program Director for the Historical Archaeology MA program. I first became aware of the Society of Ethnobiology in 1985, when my advisor, Dr. Richard I. Ford, enabled me to attend the 8th annual Ethnobiology meeting in Boston. It was my first professional conference, and it was exciting because I got to meet the people whose work I had been reading. I was immediately taken by how supportive the society was of student research. Years later, in 2009, when one of my students won The Barbara Lawrence Award for Best Student Paper, it was one of my proudest moments.

The society has been a source of inspiration for me, from the founding members whose names are synonymous with ethnobiology to the influential research that the society continues to publish. As one of the journal editors, I was lucky to work with officers and board members who showed incredible energy and dedication to the society and the discipline.

My first opportunity to support the society was minor: at the 23rd annual meetings in Ann Arbor, I led a tour of an ethnobotany trail that I had helped install at the University of Michigan's Matthaei Botanical Gardens. For the most part, I enjoyed the society from the sidelines. I was finally able to give back in a substantive way in 2008 when Virginia Popper mentioned that the society was looking for a new journal editor. We decided that working together sounded appealing, and both edited every paper, trying to help the authors showcase their research to the best effect. In doing so, I learned a great deal about effective presentation and clarity of writing for my own work. For this opportunity and the scholarly inspiration through the years, I owe a debt of gratitude to the society.

## Indigenous Peoples' Conference Travel Award

### Taylor Keen

Taylor Keen is a Senior Lecturer in the Heider College of Business Administration in Strategy and Entrepreneurship at Creighton University. Keen holds a bachelor's degree from Dartmouth College as well as a Master of Business Administration and Master of Public Administration from Harvard University, where he served as a Fellow in the Harvard Project on American Indian Economic Development. Taylor is the author of the forthcoming book from Inner Traditions Press "Rediscovering Turtle Island: A First Peoples' Account of the Sacred Geography of America". A Cherokee Nation citizen, Keen carries the name "Bison Mane" of the Earthen Bison Clan of the Omaha Tribe, The People Who Move Against the Current. Taylor Keen is the Founder of Sacred Seed, a NFP to educate and celebrate Indigenous culture and history. He lives in Omaha, Nebraska with his wife Jennifer.



## Student Conference Travel Award

### Levi Cormier



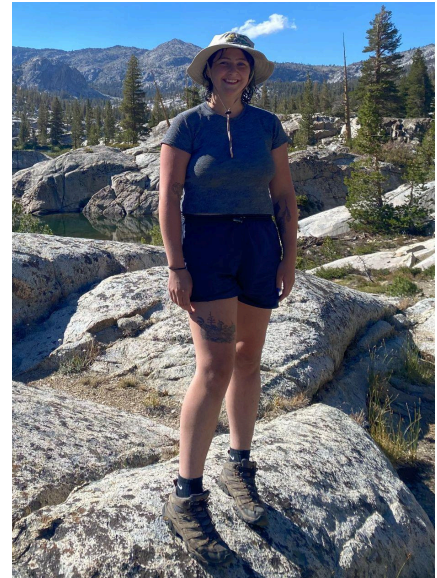
Levi is an ethnobiologist and master's student at Simon Fraser University in British Columbia, Canada. Originally from Texas, he studied biology and anthropology in undergrad before spending four years working as a professional archaeologist across bioarchaeology and zooarchaeology, among others. During this time, she noticed how much their two degrees informed their work. Looking for a way to synthesize them, Levi discovered the field of ethnobiology and the work of their advisor, Chelsey Geralda Armstrong. At SFU, his thesis looks at plant phytoliths as a way to define Indigenous forest gardens in the Pacific Northwest. With a specific garden in Sts'ailes First Nation serving as the focal point for the project, Levi has been able to work closely with the community throughout her project.

## Student Fellowship Awards

### Ecological Knowledge Research Fellow:

#### **Alyssa Zandvliet, "Characterizing Settler Colonial Land-Use Histories in the Cowichan River Estuary and Their Subsequent Impacts on Quw'utsun Traditional Food Systems"**

Alyssa is a first year MA student in the Individualized Interdisciplinary Studies (INS) program at Simon Fraser University where she is part of the Historical Ecological Research (HER) lab. Alyssa's research interests include historical ecology, habitat restoration, and environmental history and she has further personal interests in botany and mycology. Her current research is occurring in collaboration with Cowichan Tribes and uses historical-ecological approaches in order to understand and characterize settler colonial and Quw'utsun (Cowichan, Coast Salish) land use legacies in the Cowichan River Estuary. Previous work has revealed that the region has been greatly impacted by resource extraction, agriculture, and urbanization. Restoration of the estuary is currently underway, and this research may provide critical context for the integration of a food-systems approach that will contribute to the community/environmental revitalization and resilience of the estuary.



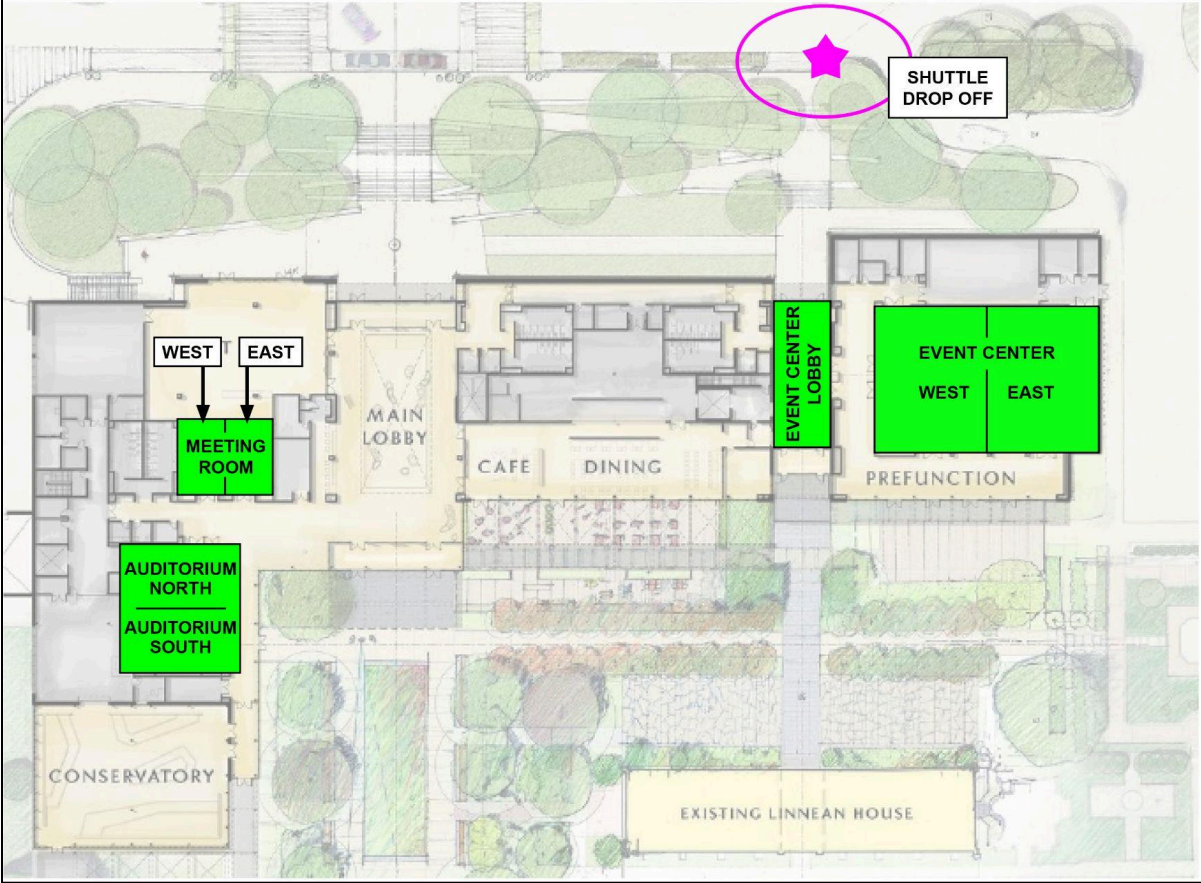
### Urban Ethnobiology Fellow:

#### **Vinisha Singh Basnet, "Bed Bug phenomenon in Subsidized Housing as a Social-Ecological System: Rethinking planning from the entanglement of humans and insects"**



Vinisha Singh Basnet is a doctoral candidate in the Department of Urban and Regional Planning and is concurrently pursuing a master's degree in Entomology at the School of Integrative Biology, University of Illinois Urbana Champaign. She studies and designs planning interventions that focus on human-insect entanglements. Currently, her research on bed bugs attempts to examine how bed bugs, in low-income neighborhoods in the U.S., are embedded within complex social-ecological systems. The Urban Ethnobiology Fellowship will assist her in conducting ethnographic research in Champaign County, Illinois, to understand the concentration of bed bug infestations in low-income neighborhoods. Additionally, she is working with the INHS Medical Entomology Lab at UIUC to investigate the efficacy of entomopathogenic fungus on bed bugs. Her work uses different methodologies and disciplinary lenses to address issues that stem from human-nonhuman interaction and aims to design socially just and sustainable futures.

# Map of Venue



## Wednesday Workshops

### Foraging and Cooking an Ozarks Lunch with Chef Rob Connoley

Date and Time: Wednesday, 24 April, 2024 - 09:00 to 17:00

Location: Off site

Organizers: Natalie Mueller and Rob Connoley

Just to the southwest of St. Louis lie the Ozarks Mountains, a region with a rich and unique culinary tradition, shaped by 18-19th century encounters between Indigenous people, Euroamerican settlers, and enslaved African Americans. Chef Rob Connoley is the owner of [Bulrush](#), an award-winning restaurant in St. Louis that strives to "honor each of these cultures and present their foods with authenticity and respect, using contemporary cooking techniques and hyper-local, hyper-seasonal ingredients." Chef Rob often uses foraged ingredients in his dishes, and is an expert on the wild foods of the Ozarks. He will lead an all day workshop on this family land near St. Genevieve, MO (about 1 hour away from St. Louis), that will include foraging for morel mushrooms and other late spring foods, and cooking an Ozarks meal over an open fire for a late lunch. Transportation is included in the cost of the workshop.

### R Programming for Ethnobiologists: A Beginner's Guide to the Tidyverse

Date and Time: Wednesday, 24 April, 2024 - 09:00 to 17:00

Location: Auditorium South

Organizer: Jonathan Dombrosky

Data scientists extract useful knowledge from a deluge of data, and they develop new tools to manage this task daily. These tools frequently rely on a programming language. Unfortunately, learning a programming language can be daunting for both new and experienced researchers. It relies on detailed knowledge of new software, grammatical and syntactical conventions, along with new data organization practices. It is easy to get lost in the sea of information on each of these topics. Fortunately, a popular new suite of tools has emerged within R called the tidyverse. Packages within the tidyverse share a similar design philosophy and data structure, which allows for the communication of complex statistical processes with only a handful of core functions. A common way to integrate data manipulation, visualization, and modeling with the tidyverse has led to an explosion of new R users. This workshop will introduce attendees to basic computer processes and file structures, useful core tidyverse packages called dplyr and ggplot2, and a new package for modeling called tidymodels. Integrating R and the tidyverse into research projects enhances reproducibility, supports long-term project management, and allows users to access up-to-the-minute statistical tools free of charge. Participants must bring a laptop with R and RStudio downloaded and will be provided lunch. The deadline to place your lunch order for this workshop is Friday April 12, 2024. You may still register after this date, as long as there is space, but we will not be able to provide lunch for late registrants.

## Seeing Seeds: An Artistic Investigation

Date and Time: Wednesday, 24 April, 2024 - 09:00 to 13:00

Location: Meeting Room East

Organizer: Sharon Bladholm

Participants will explore various artistic processes through observational study of actual seeds and seed pods, as well as enlarged ceramic seeds. We will investigate seed form and color, starting with pencil drawing and then adding watercolor washes. We will continue with self-hardening clay, drawing and carving into small clay slabs, then ink them up with water-based ink, subsequently laying thin rice paper on the slabs, burnishing them. Finally we will explore fully three dimensional form inspired by seeds, creating small seed sculptures that can be painted. Participants will have the option of displaying their creations at the banquet.

### **Workshop Leader: Sharon Bladholm, Artist**

Sharon is an artist inspired by the botanical realm in all its aspects, who loves to share her dual enthusiasm for seeds/plants and art making. She has participated as artist on plant hunting expeditions with the Field Museum, Conservation International, and the Botanical Research Institute of Texas's, Andes to Amazon Biodiversity Program. She has completed artistic residencies in other remote areas of the Peruvian and Ecuadorian Amazon with Project Amazonas and the Tiputini Biodiversity Station. Her traveling exhibition Soils, Seeds and Sprouts: Tropical and Temperate explores botany and soil microorganisms, using art as a conduit to inform the public on important issues regarding nature, science, conservation, and biodiversity. She often teaches workshops for a diverse audience.

## Supporting Cultural Stewardship of Indigenous People in Urban Areas

Date and Time: Wednesday, 24 April, 2024 - 10:00 to 12:00

Location: Meeting Room West

Organizer: Erana Walker

Māori, the indigenous people of New Zealand use the concept of Kaitiakitanga to articulate Māori cultural stewardship. Kaitiakitanga express long-held responsibilities of Māori to nature, which are detailed in narratives of lineage, connection to place and the expression of cultural practices. Kaitiakitanga is now widely utilized in New Zealand as a framework for the protection of nature and provides a foundation for indigenous inclusion in environmental resource issues. Efforts to maintain this practice and the connection to nature are now a focus of Māori communities, particularly within urban areas where biodiversity is declining and urban expansion is increasing. This dilemma of Māori and the practice of kaitiakitanga prompts a need to understand how wider indigenous practices of environmental stewardship exist in urban areas, what challenges might arise in the expression of these practices and knowledge and importantly, how support for these practices can grow amongst urban indigenous and non-indigenous folk.



This workshop on urban indigenous stewardship will enable participants to identify their local communities/indigenous groups in and in proximity to urban areas, what challenges may be present for indigenous stewardship and how they might work to support and encourage stewardship in urban spaces. The workshop will give participants the opportunity to hear from other like-minded people and share knowledge together that may benefit the growth of cultural stewardship of nature in urban areas.

## **Reviewing Books and More: Workshop with Reviewers, Readers, and Editors**

Date and Time: Wednesday, 24 April, 2024 - 14:00 to 16:00

Location: Meeting Room West

Organizers: Sarah Walshaw, Maria Bruno, Cory Whitney, Felice Wyndham

Ethnobiology Letters (EBL) is host to the Society's reviews of books and other media. Reviews of scholarship are an important service and intellectual contribution: they can position a work within the field, present highlights of the work's message and method to the reader, and promote the scholar(s) and their work within academia and beyond. Many early career scholars are well positioned to review a work and a well-crafted review helps establish their voice in the discipline.

We welcome established scholars and early career researchers to join EBL editors (past and present) to discuss ideas and share skills for analytical reading and drafting reviews for submission. We will share practical advice for the process of submitting to EBL and address frequently posed questions. We also look forward to hearing your ideas about what you'd like to see in this space, and visions for the future of reviews at the Society of Ethnobiology.

## **Espuma de Cacao**

Date and Time: Wednesday, 24 April, 2024 - 14:00 to 16:30

Location: Meeting Room East

Organizers: Richard Tan and Nat Bletter

Ethnographic fieldwork in recent decades has vastly expanded our knowledge of the dizzyingly varied forms of Mesoamerican cacao beverages. At last year's conference workshop on Mexican condiments, Richard Tan and Maite Lascurain presented a range of flowers including *Bouyeria huanita* and the famous ear-flower *Cymbopetalum penduliflorum* added to traditional cacao beverages for specific aromas or flavors. This year we focus on diverse cacao foaming agents, i.e. saponin- or latex-rich plant additives from species of *Smilax*, *Gonolobus*, *Marsdenia*, that contribute apparently nothing in olfactory or gustatory terms, but which when frothed, bind with specific surfactants in cacao to create a stable colloidal suspension. The result ranges from a rich head of bubbles to a bowl of pure foam, a luxurious, ethereal comestible, light and insubstantial as air. Physico-chemical properties and mechanisms of these foams are inadequately understood and there is a confusing diversity of recipes and practices. Mazatec,

Chinantec, Zapotec and other Mesoamerican names might have Proto-Mixe-Zoque origins; but they also resonate with one lexeme in Nahuatl "*popo*" which refers to blurring, bubbling, aeration, smoke and other amorphous states. Otherwise, these foams don't seem to be classified as a group nor encoded in any other indigenous cognitive or lexical categories. This puts stumbling blocks in efforts to construct an overarching ethnobotanical theory to explain these items, which are unique and without equivalent among world food cultures.

This workshop is designed as a series of experiments to puzzle out the mysteries of the human knowledge and human knowhow involving plants that cause foam. We review 16th century references to different cacao beverages in the Florentine Codex or as described by Dr. Francisco Hernandez. We establish the ethnography and geography of these foamed drinks in diverse living indigenous cultures. We conduct hands-on demonstrations of historically-attested methods for producing foam, including pouring from a height, to see if they *really* work. We explain the step-by-step process of recreating the celebrated *bu'pu* of the Isthmus of Tehuantepec, which is flavored and foamed with *Plumeria rubra* flowers, and taste our work afterwards. Depending on ingredient availability, we also hope to deconstruct one complex cacao beverage, perhaps the *tejate* of Oaxaca, foaming each component of the recipe, including *pixtle* (*Pouteria sapota*), the flowers of *Quararibea funebris*, the processed seeds of *pataxte* (*Theobroma bicolor*), individually and then together, to try to understand the biotechnology involved, and explain what happens and why. Come formulate your own wild theories and join in the speculative fun!

## Hearing Humus

Date and Time: Wednesday, 24 April, 2024 - 16:00 to 17:00

Location: ONLINE via Zoom

Organizer: Sophia Marie Dacy-Cole

The seriousness of the topsoil loss humanity is facing is terrifying and heartbreaking. Creative techniques of ecological intimacy help us to weather this terror. Who might we be if we began to come home to soil? To treat soil as a loved one?

Hearing Humus is a bioacoustic workshop that allows participants to commune with soil on soil's own acoustic scale. It leverages embodiment practices to respond to the soil crisis. The workshop pivots around the shared experience of listening live to a specific soil microecosystem. This workshop draws on my research-creation practice into the intersection between the growing fields of polyvagal somatics, and the environmental humanities. How can combining embodiment practices with more-than-human encounters create a deeper connection with the soils around us? How might this deeper connection with the soils around us prove therapeutic? If we were to come to love soil, how would that change our perception? Our agricultural practices?

I will lead participants through a somatic meditation, designed to open their focus by bringing them into a parasympathetic nervous system state. Next participants will be invited to deeply listen to different soil ecosystems. The sounds are lively and fascinating. Following the listening experience, there will be time for silent reflection, and a facilitated discussion. The facilitated discussion space will end with a skillshare, within which participants will be able to share their own experience with bioacoustics, soil, or deep listening.

Participants are encouraged to wear headphones to hear the subtle soil sounds, and to attend from a place where they won't be disturbed.

## **Saturday Field Trips**

### **Mississippi River Canoe Trip**

Date and Time: Saturday, 27 April, 2024 - 09:00 to 16:30

Location: Meeting Room East

Organizer: Kate Farley - Missouri Botanical Garden

Explore the Mississippi River by canoe with Big Muddy Adventures, a St. Louis-based outfitter that specializes in guided trips along the Mississippi and Missouri Rivers. You will be picked up from conference hotels and be transported by shuttle to North Riverfront Park. After a brief safety talk and paddling demonstration, we will load into 30' Voyageur canoes with Big Muddy's experienced guides and paddle along a non-commercially-navigable stretch of the Mississippi to a forested island. We will stop for lunch and take some time to explore the island. We'll continue on into the port of St. Louis where we'll see our setting quickly transition from natural to built. We'll pass beneath five contemporary and famous historic bridges, while learning about some notable historic landmarks, and catching incredible views of some of St. Louis's oldest riverfront buildings. The trip ends with an unbeatable river view of the Gateway Arch and lands us on the historic landing of downtown St. Louis. No canoe experience is necessary. First-time paddlers are welcome!

### **Shaw Nature Reserve Trip**

Date and Time: Saturday, 27 April, 2024 - 07:40 to 12:50

Organizer: Quinn Long - Missouri Botanical Garden Shaw Nature Reserve

Shaw Nature Reserve is a 2,400 acre nature reserve belonging to the Missouri Botanical Garden, located about 35 miles west of St. Louis. Shaw is home to distinctive natural communities of the Ozark Border region, including woodlands, wetlands, and prairie. This tour will visit the Whitmire Wildflower Garden, a 5-acre botanical garden that is a premiere demonstration of native plant horticulture in the Midwestern US. The tour will also feature a visit to the Ozark Ethnobotany Garden, an expansion of the Whitmire Wildflower Garden that is currently in

development to display and interpret regional native plants used for food, medicine, fiber, and dye. Tour participants will then venture further into Shaw Nature Reserve to enjoy a 1-mile walk with scenic vistas through woodlands, glades, and prairie while learning about ecological restoration and land stewardship.

### **Cahokia Mounds Field Trip and Guided Tour**

Date and Time: Saturday, 27 April, 2024 - 09:30 to 13:30

Organizers: Natalie Mueller - Washington University, Gayle Fritz, and Jane Mt. Pleasant

Participants will visit Cahokia Mounds State Historic Site, one of the most important archaeological sites in North America. Built rapidly by a multi-ethnic community around 1050 AD, this city has thrived for 200 years, supported by a diverse agricultural system and a rich floodplain environment. Participants will tour the site with Dr. Gayle J. Fritz, paleoethnobotanist and author of the book "Feeding Cahokia," and Dr. Jane Mt. Pleasant, an expert on Indigenous North American agricultural practices. A boxed lunch will be provided. \*Note, the Visitor Center and Museum will be closed, so this is an outdoor field trip that will involve walking on paved paths and mowed lawns.

# List of Sessions

- I. Cassava and Cacao
- II. Politics of the Urban Body: Bioarcheological Studies of Ancient state
- III. History and Folklore
- IV. Roundtable Session: Curators, Keepers, and Sleeping Seeds: How can Historical and Archaeological Seed Collections Contribute to the Revival of Traditional Agriculture?
- V. Roundtable Session: Publishing in Ethnobiology: Trends and New Directions
- VI. Cultural Keystone Places and Historical Ecology (Part 1)
- VII. Urban Ethnobiology
- VIII. Knowledge Integration/Traditional Ecological Knowledge
- IX. Cultural Keystone Places and Historical Ecology (Part 2)
- X. Ethnomedicine
- XI. Reflections on the Field
- XII. Paleoethnobotany and Archaeology
- XIII. Urbanization and Local Knowledge
- XIV. The Ethnobiology of Birds
- XV. Cultural Forests
- XVI. Food Resilience in a Changing World
- XVII. Roundtable Session: When We Listen, What Can We Hear? Foregrounding Listening Methods in Ethnobotany
- XVIII. Virtual Poster Session
- XIX. Poster Session: Advances in Data Science and Environmental Archaeology
- XX. Poster Session: Measuring up to Environmental Archaeology: New Biometric Applications to the Study of Past Plant and Animal Remains
- XXI. General Poster Session

# Timetable

## DAY 1, WEDNESDAY, 24th April

Time (start)	Auditorium North	Auditorium South	Meeting Room East	Meeting Room West	Offsite/Online	
08:00	Registration: Bayer Event Center Lobby (8:00–14:00)					
08:30						
09:00		R Programming for Ethnobiologists: A Beginner's Guide to the Tidyverse (9:00–17:00)	Seeing Seeds: An Artistic Investigation (9:00–13:00)		Foraging and Cooking an Ozarks Lunch with Chef Rob Connoley (9:00–17:00)	
09:30						
10:00	Board Meeting (10:00–15:30)					Supporting Cultural Stewardship of Indigenous People in Urban Areas (10:00–12:00)
10:30						
11:00						
11:30						
12:00						
12:30						
13:00						
13:30						
14:00				Espuma de Cacao (14:00–16:30)	Reviewing Books and More: Workshop with Reviewers, Readers, and Editors (14:00–16:00)	Hearing Humus Online via Zoom (16:00–17:00)
14:30						
15:00						
15:30						
16:00						
16:30						
17:00 to 21:00	Registration: Lenox Room, Chase Park Plaza Royal Sonesta Hotel, 212 Kingshighway Boulevard (17:00–20:00)					
	Opening Reception, Communities and Ethnobiology Grant Award Ceremony: Lenox Room, Chase Park Plaza Royal Sonesta Hotel, 212 Kingshighway Boulevard (18:00–21:00)					

## DAY 2, THURSDAY, 25th April

Time (start)	Auditorium North	Auditorium South	Meeting Room	Other Locations
07:30	Registration: Bayer Event Center Lobby (7:30–17:00)			
08:00				
08:30	Plenary Session: William L. Brown Talk and Welcome - Bayer Event Center West (8:30 - 10:00)			
09:00				
09:30				
10:00	Coffee Break			
10:30	I. Cassava and Cacao (10:30–12:00)	II. Politics of the Urban Body: Bioarcheological Studies of Ancient state (10:30–12:00)	III. History and Folklore (10:30–12:00)	
11:00				
11:30				
12:00	IV. Roundtable: Curators, Keepers, and Sleeping Seeds: How can Historical and Archaeological Seed Collections Contribute to the Revival of Traditional Agriculture? (12:15–13:15)	V. Roundtable: Publishing in Ethnobiology: Trends and New Directions (12:15–13:15)		<b>Herbarium Tour</b> (12:30–13:30) <i>Meet in the Bayer Center Lobby, 4500 Shaw Blvd (10 min. walk west on Shaw Blvd), signup required<sup>†</sup>.</i>
12:30				
13:00				
13:30	VI. Cultural Keystone Places and Historical Ecology Part 1 (13:30–15:00)	VII. Urban Ethnobiology (13:30–15:00)	VIII. Knowledge Integration/ Traditional Ecological Knowledge (13:30–15:00)	
14:00				
14:30				
15:00	Coffee Break			
15:30	IX. Cultural Keystone Places and Historical Ecology Part 2 (15:30–17:00)		X. Ethnomedicine (15:30–17:00)	<b>Rare Books Collection Tour</b> (15:30–16:30) <i>Meet in front of the MoBot Library, signup required<sup>†</sup>.</i>
16:00				

16:30				
17:00				
17:30	Student Social, Urban Chestnut, 4465 Manchester Avenue (17:30–19:00)			<b>Cutler-Anderson Corn Collection Tour</b> (17:15–18:15) <i>Meet at 4500 Shaw Blvd (10 min. walk west on Shaw Blvd), signup required<sup>†</sup>.</i>
18:00				
18:30				

### DAY 3, FRIDAY, 26th April

Time (start)	Auditorium North	Auditorium South	Meeting Room	Other Locations
08:00	Registration - Bayer Event Center Lobby (8:00–17:00)			
08:30				
09:00	XI. Reflections on the Field (9:00–10:00)	XII. Paleoethnobotany and Archaeology (9:00–10:00)	XIII. Urbanization and Local Knowledge (9:00–10:00)	
09:30				
10:00	Coffee Break			
10:30	XIV. Ethnobiology of Birds (10:30–11:15)	XV. Cultural Forests (10:30–12:00)	XVI. Food Resilience in a Changing World (10:30–12:00)	<b>Tour of Biocultural Collections</b> (10:30–11:30) <i>Meet at 4500 Shaw Blvd (10 min. walk west on Shaw Blvd), signup required<sup>†</sup>.</i>
11:00				
11:30	XVII. Roundtable: When we listen, what can we hear? Foregrounding listening methods in ethnobotany (11:30–13:15)	2024 Annual Meeting of Biocultural Collections (12:15–13:30)	Student Mentor Lunch (12:15–13:15)	Lunch (12:00–13:30)
12:00				
12:30				
13:00				



13:30	XVIII. Virtual Poster Session (13:30–15:00)			Poster Sessions (XIX, XX, XXI) Bayer Event Center West (13:30–15:00)	Sachs Museum Tour (2:30–3pm). <i>Meet in Sachs Museum Lobby.<sup>†</sup></i>
14:00					
14:30					
15:00	Coffee Break				
15:30	General Membership Meeting, Awards Ceremony Distinguished Ethnobiologist Talk Bayer Event Center West (15:30–17:15)				
16:00					
16:30					
17:00					
17:30					
18:00	Banquet: William A. Kerr Foundation, 21 O'Fallon Street (18:00–21:00)				
18:30					
19:00					
19:30					
20:00					
20:30					

<sup>†</sup> We will have sign up sheets at the registration desk for these tours.

## DAY 4, SATURDAY, 27th April

Time	Event	Shuttle
7:40-12:50	Shaw Nature Reserve Visit	7:40 Pick up Chase Park Plaza* 8:00 Pick up MoBot 12:30 Drop off MoBot 12:50 Drop off Chase Park Plaza*
9:00-16:30	Mississippi River Canoe Trip	9:00 Pick up Chase Park Plaza* 14:30 Drop off Chase Park Plaza*
9:30-13:30	Cahokia Mounds Field Trip and Guided Tour	9:30 Pick up Chase Park Plaza* 9:45 Pick up MoBot 13:10 Drop off MoBot 13:30 Drop off Chase Park Plaza*

\* Pick-up/drop off location: in front of the Chase Park Plaza Cinemas on Lindell Blvd.

# Presentation Schedule

(Note that presenters with an asterisk are being considered for the Barbara Lawrence Award)

## DAY 2, Thursday, 25 April, 2024

### **I. Cassava and Cacao**

10:30	<i>Pérez, Darío; Anne Duputié; Boris Szurek; Sophie Caillon</i> Agricultural Practices Involved in the Spread and Diversity of a Cassava Bacterial Pathogen in Small-scale Farms of Colombian Caribbean
11:15	<i>Wooding, Stephen; César Rubén Peña</i> A River of Diversity: Cultural and Biological Variation in Amazonian Yuca (Cassava, Manioc)
11:30	<i>Charles, Caitlyn; Alison Ormsby</i> A Review of the Potential Interpersonal Applications of Cacao

### **II. Politics of the Urban Body: Bioarcheological Studies of Ancient state**

10:30	<i>Haileselassie Assefa, Sewasew</i> Embodying Culture Change: Examination of Health in 14-17th C CE populations of Mtwapa, Kenya
10:45	<i>Bey, Bridget</i> Evaluation of Early Life Course History in Late Pre-Hispanic Andean Populations (southern Peru, 800-1500 CE)
11:00	<i>Jiang, Han</i> Exploring Health at the Human-Animal Interface During the Neolithic-Bronze Age Transition in China
11:15	<i>Baitzel, Sarah</i> Urban Healthcare in the Past: thinking through well-being and medicine in ancient cities

### III. History and Folklore

10:30	<i>Farley, Kate</i> Mountain Midwives and Granny Women: Botanical Medicine for Reproductive Health in Ozark Folklore Collections
10:45	<i>Bye, Robert; Edelmira Linares</i> Proto-ethnobotany radiated from the "Gateway to the American West" (St. Louis)
11:00	<i>Minnis, Paul; Giulia Mattalia; Natalyia Strymets; Renata Soukand</i> Ukrainian Plants Consumed as Famine Foods during the Holodomor, 1932-1933
11:15	<i>Ezhevskaya, Anya</i> Fungi in Slavic Folklore
11:30	<i>Pierotti, Raymond</i> Myth And Scientific Insight
11:45	<i>Stringer, David</i> When the Foxglove Blooms, the Mackerel Will Come: A Cognitive Universal Applied to Local Ecosystems

### IV. Roundtable

12:15 to 13:15	<i>Mueller, Natalie; Charlie Miksicek; Lisa Young; Veronica Pipestem; Kent Sanmann; Marcus Briggs-Cloud; Angela Ferguson; April Tarbell</i> Curators, Keepers, and Sleeping Seeds: How can Historical and Archaeological Seed Collections Contribute to the Revival of Traditional Agriculture?
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### V. Roundtable

12:15 to 13:15	<i>Stepp, Rick; Maria Bruno; Steve Wolverton; Andrew Flachs</i> Publishing in Ethnobiology: Trends and New Directions
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### VI. Cultural Keystone Places and Historical Ecology (Part 1)

13:30	<i>Wolverton, Steve; Chelsey Geralda Armstrong; Jonathan Dombrosky; Susan C. Ryan</i> Taphonomic Perspectives on Archaeological Faunal Abundance and Its Relevance to Identifying Cultural Keystone Places
13:45	<i>Arinyo i Prats, Andreu; Nancy Turner; Shauna LaTosky</i> The Need for Cultural Keystone Practices thinking
14:00	<i>Lepofsky, Dana; Sean Markey; The XLAP Team</i> The Xwe'etay/asqueti Archaeology Project: Historical Ecology of a Forgotten Cultural Keystone Place

14:15	<i>Latosky, Shauna; Olisarali Olibui</i> ‘Without Girarri (African wild olive), We are Not Mun (Mursi)’: Building a Case for “Cultural Keystone Places” in Southern Ethiopia
14:30	<i>Sachs, Nava; Sofie McComb; Tara Martin</i> Observing Relationships Between Indigenous-Led Deer Stewardship and Cedar Forest Health in the Salish Sea

## VII. Urban Ethnobiology

13:30	<i>Stevens, Alison</i> Breaking the NTFP Box: Indigenous Food Sovereignty and the Restoration of <i>Allium tricoccum</i> in an Urban Forest
13:45	<i>Dolan, Jessica</i> Kanonhkwa'tsheranákere, Where the Medicines Live: Ethnobiology in Service of Indigenous-led Conservation
14:00	<i>Rietjens, Ricky; Gretel Kiefer; Ingrid Felsl; Grant Fessler</i> Plants of Concern, A Community Science Rare Plant Monitoring Program
14:15	<i>Shebitz, Daniela; Andres Ospina Parra</i> Understanding Miyawaki Forests from the Ground Up
14:30	<i>Walker, Erana</i> Cultural Stewardship and Urban Restoration – The Case of Kaitiakitanga and Ecological Restoration in New Zealand Urban Areas

## VIII. Knowledge Integration/Traditional Ecological Knowledge

13:30	<i>Drew, Joshua; Katherine Lawson; Amanda Ford; Leah Rubin; Peter Hughes; Waisiki Sevakarua; Bay Holmes</i> The Species That Support The Services: Exploring Links Among Gender, Species and Ecosystem Services in Indigenous Coastal Fijian Communities.
13:45	<i>Basnet, Vinisha Singh</i> Understanding Non-Timber Forest Products through Epistemological Pluralism: A Multi-Sited Ethnography of Decline in Lac Production *
14:15	<i>Cannon, Carrie</i> Natives and the Native Plant Society
14:30	<i>Teke, Ache; Tonjock Rosemary</i> Perception and Uses of Mushrooms by Local Communities of Kilum-Ijim, Northwest Region of Cameroon

## IX. Cultural Keystone Places and Historical Ecology (Part 2)

15:30	<i>Grenz, Jennifer</i> Centering Indigenous Cultural Resurgence to Improve Ecological Restoration Outcomes of Cultural Keystone Places of the Quw'utsun Peoples
15:45	<i>Forste, Kathleen; Amalia Pérez-Juez; Alexander J. Smith</i> Expanding Cultural and Natural Heritage Through Archaeology: An Application of CKP in the Medieval Mediterranean
16:00	<i>Armstrong, Chelsey Geralda</i> Historical-Ecological Approaches to Challenging State Conservation Practices in Lax'yip Gitxsan
16:15	<i>Field, Julie; Joy McCorriston; Scott Fisher; Kiana Frank; Samantha Kirgesner; Kia'i Collier</i> Microbes, Archaeology, and Community in Hawaiian Fishpond Restoration
16:30	<i>Turner, Nancy, C'tasi:a Geraldine Manson</i> "Connecting to the Land": Snuneymuxw History Written in Places

## X. Ethnomedicine

15:30	<i>Watson, Tyler</i> Uncovering the Secrets of Datura: A Treasure Trove for Natural Products Discovery
15:45	<i>Faruque, Mohammad Omar; John Richard Stepp; Shaikh Bokhtear Uddin</i> Biocultural conservation of neglected and underutilized indigenous foods and their potential as alternative food sources and medicines in Bangladesh
16:00	<i>Soewu, Durojaye</i> Sacrifices and rituals in ethno-biological practices amongst the Yorubas, West Africa: dynamics and implications for biodiversity conservation
16:15	<i>Lagalisse, Erica</i> Beware the Psychedelic Metaverse: Primitive Accumulation, Productivity and Mind-Altering Plants
16:30	<i>Fugiao, Jumaine Mauricio</i> Documentation Of The Ritual Plants Used By The Isneg Community And Their Conservation Status In Dumalneg, Ilocos Norte, Northwestern Luzon, Philippines

## **DAY 3, Friday, 26 April, 2024**

### **XI. Reflections on the Field**

09:00	<i>Anderson, Eugene</i> Early Ethnobiology: Historical and Personal Notes
09:15	<i>Flachs, Andrew</i> Ethnobiology and growth skepticism: What can we contribute?
09:30	<i>Courtney, Sofi; Phillip Levin</i> How Do Boundary Spanning Researchers Navigate Within Settler-Colonial Institutions? Understanding the Nuts and Bolts of Environmental Science Research Partnerships with Indigenous Peoples

### **XII. Paleoethnobotany and Archaeology**

09:00	<i>Salywon, Andrew; Wendy Hodgson</i> Evidence for Prehistoric Agave Gardens of <i>Agave parryi</i> var. <i>parryi</i> (Agavaceae) near Habitations in Central Arizona
09:15	<i>Fairbanks, Regina; Jeffrey Ross-Ibarra</i> Domestication is Nothing New: Maize Domestication Leveraged Preexisting Genetic Variation
09:30	<i>Johnson, Emily; Douglas Kennett; Taylor Mori; Amber VanDerwarker</i> Archaeological Insights into Nixtamalization: Tracing the Origins of Cultural Tradition
09:45	<i>Shay, Creighton (C. Thomas)</i> Paleoethnobotany on the Northern Edge of the North American Plains

### **XIII. Urbanization and Local Knowledge**

09:00	<i>Sehgal, Anju Batta</i> Impact of Urban Transformations on The Indigenous Cultivation in Kullu District of Himachal Pradesh, India
09:15	<i>Stevens, Michelle</i> Rising from the Ashes: Culturally significant plants and Traditional Fire Management at Bushy Lake, Sacramento
09:30	<i>Flores-Silva, Alondra; School Community Perempitz; School Community Chancuellar; Ramón Cuevas-Guzmán</i> Children as Ethnobotanists: Rediscovering the Wild Plants in Southern Jalisco, Mexico.

#### **XIV. The Ethnobiology of Birds**

10:30	<i>Gosford, Bob; Mark Bonta</i> Garrkan: An Avian "Troublemaker For Fire"
10:45	<i>Hunn, Eugene</i> The Aztec Fascination with Birds: Deciphering 16th-Century Sources in Nahuatl
11:00	<i>Kane, Stephanie C.</i> The Choreography of Biodiverse Belonging: Flamingos, Spoonbills, and Godwits Foraging in Lisbon's Mudflats

#### **XV. Cultural Forests**

10:30	<i>Cormier, Levi</i> Documenting Historical and Ongoing Sts'ailes (Coast Salish) Land-Use: Reconstructing Forest Garden Environments through Phytolith Analysis *
10:45	<i>AR, Amrithesh; Ramachandran VS; Ormsby AA; Viswanathan PK</i> A Review Study of the Ethnobotanical Significance of Sacred Groves in India
11:00	<i>Sheban, Karam</i> Three Years of the Northeast Forest Farmers Coalition
11:15	<i>Robinson, Alyssa Jeanne; Jean-Thomas Cornelis; Chelsey Geralda Armstrong</i> Quantification of Soil Properties and Nutrient Dynamics in Indigenous Forest Gardens of the Pacific Northwest
11:30	<i>Kopparambil, Sreelekha; Alison Ormsby</i> Sacred Grove Restoration in Kerala, India
11:45	<i>Tinao, Mark Joseph; Warren Joseph Dollente; Marlon Pareja; Jesiree Ann Bibar; Ron Ron Paul Emperador</i> One Million Trees and Beyond: A Collective Initiative of Philippine Lasallian Family towards Environmental Stewardship

#### **XVI. Food Resilience in a Changing World**

10:30	<i>Wehi, Priscilla</i> Traditional Foods, Change, and Resilience at Two Māori Community Events
10:45	<i>Fahey, Fiona</i> An in vivo ethics for Seed Exchanges
11:00	<i>Rahayu, Yen Yen Sally</i> Examining the Potential of Wild and Underutilized Edible Plants in Improving Nutrition, Health, and Wellbeing: A Case Study in a Sundanese Community in West Java, Indonesia

11:15	<i>Rodriguez, Amani; Alex McAlvay</i> Adapting the Wixárika Milpa: Interactions Between Climatic and Social Change
11:30	<i>McAlvay, Alex; Seid Hassen; Asmare Dejen; Endale Amare; Zemedet Asfaw; Mohammad Al-Zein; Marina Mosulishvili; Emma Burnett; John Letts; Anna DiPaola</i> Remembering resilience: supporting and revitalizing traditional mixed grain cropping in Ethiopia and the Republic of Georgia for climate tolerance
11:45	<i>Solankar, Saish</i> Subsistence Hunting & Farming in the Lotha Peoples of Nagaland

### **XVII. Roundtable**

11:30 to 13:00	<i>Kindscher, Kelly; Aubrey Streit Krug; Marcela Paiva Valiz; Taylor Keen; Omar Tesdell; Tala Khouri; Amy June Breesman</i> When we listen, what can we hear? Foregrounding listening methods in ethnobotany
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### **XVIII. Virtual Poster Session**

13:30	<i>Gamit, Sandip; Hitesh Solanki</i> Traditional Knowledge of Medicinal plants used by Tribal Communities in Tapi District, Gujarat (India)
13:30	<i>Cajtak, Karl</i> Animal husbandry and environmental inferences in Sant Esteve d'Olius between the Iron Age (4th - 2nd c. BCE) and the Middle Ages (10th - 14th c. CE)
13:30	<i>Brandes, Claire</i> Applying Information Theory To Osteometric Data: A New Approach To Constructing Demographic Profiles Of Faunal Assemblages

### **XIX. Poster Session: Advances in Data Science and Environmental Archaeology**

13:30	<i>Dombrosky, Jonathan</i> Two Years of Reproducible Archaeofaunal Reports at Crow Canyon Archaeological Center
13:30	<i>Carney, Molly</i> What are the ethical implications of AI and environmental archaeology?



**XX. Poster Session: Measuring up to Environmental Archaeology: New Biometric Applications to the Study of Past Plant and Animal Remains**

13:30	<i>Kiahtipes, Christopher; Olivia Young; Benjamin Huebner; Janell Jean-Baptiste; Lauren Koerner; Amanda Malerba; Jaime Rogers; Haille Skinner; Riley Stone</i> Assessing a Non-Destructive Method for Reconstructing Fire Activity in Sedimentary Records
13:30	<i>Dombrosky, Jonathan; Steve Wolverton; Tessa McCright</i> Assessing Inter- and Intraobserver Variability in Barbara Lawrence's Criteria for Identifying Pronghorn and Deer Astragali
13:30	<i>Belmaker, Miriam</i> Mammal Dental Tribology as Paleoenvironmental Proxies
13:30	<i>Welker, Martin; Max Kremer</i> Oh Deer, What Are You? Differentiating White-Tailed and Mule Deer Post-Cranial Skeletons

**XXI. General Poster Session**

13:30	<i>Johnson, Toni; Alex McAlvay</i> African Cereal-based Brews: Cultural Heritage and Nutritional Importance
13:30	<i>Zandvliet, Alyssa</i> Characterizing Settler Colonial Land-Use Histories in the Cowichan River Estuary and their Subsequent Impacts on Quw'utsun Traditional Food Systems
13:30	<i>Ming, Emma; Molly Carney</i> Comparing Domestic and Food Processing Paleoethnobotanical Assemblages
13:30	<i>Seupaul, Taylor</i> Cultivating Knowledge: Establishing an Accessible Southwestern Macro Botanical Reference Collection
13:30	<i>Crowley, Jazlee; Brenna Prevelige; Dee Denver</i> Ethical Quandaries Concerning Invasive Spiritual Plants: <i>Ficus religiosa</i> on the Island of Kaua'i
13:30	<i>North, Joel, Molly Carney</i> Ethnobotanical Uses of the American Beautyberry ( <i>Callicarpa americana</i> )
13:30	<i>Lopez Rojas, Maria; Molly Carney</i> Preliminary Results on Wood Resources in Site 45PO358
13:30	<i>Zanghi, Marco; Alex McAlvay</i> Traditional Management of Leguminous Shrubs in Milpa System by Wixárika Communities

13:30	<i>Duan, Qimeng; Guiyun Jin</i> Understanding the Agricultural Management at Liangchengzhen, China
13:30	<i>Ford, Anabel; Justin Tran</i> Provisioning Ancient Maya Cities: Modelling Food and Shelter in the Maya Forest at El Pilar

## Presentation Abstracts

Anderson, Eugene. **Early Ethnobiology: Historical and Personal Notes** (Session XI. Reflections on the Field)

To me, the critical moment in ethnobiology was the point at which anthropologists began to specify what words meant in traditional small-scale languages, instead of “translating” words by finding an English or Latin equivalent. Self-conscious use of “native categories” began with Lewis Henry Morgan and Frank Cushing in the 1870s, and won its way slowly against some opposition. The term “ethnobotany” was coined by John Harshbarger in 1895. By the time of John Peabody Harrington, indigenous categories were focal to research, and “ethnozoology” appeared as a term. Harrington had much to do with spreading the idea. I got into the field in 1960, by which time “ethnoscience” had just been added to the mix. My personal experiences at the dawn of that field may be useful to historians of ethnobiology.

AR, Amrithesh, Ramachandran VS, Ormsby AA, and Viswanathan PK. **A Review Study of the Ethnobotanical Significance of Sacred Groves in India** (Session XV. Cultural Forests)

Sacred groves are forest areas containing idols worshiped and protected through belief systems. India has over 100,000 groves. The Western Ghats, including Kerala, contains numerous small groves. Sacred groves are shrinking due to changes in lifestyle, socio-cultural systems, and waning trust in belief systems. Kerala’s high population density and urbanization has contributed to the decline. We conducted a systematic review of qualitative and quantitative studies about sacred groves, using a survey of online databases conducted in Scopus, Google Scholar, Pubmed, and Web of Science, as well as offline libraries. Reference to ‘sacred groves’ was found in 84 online articles and 25 offline articles. We grouped the articles into three categories: socio-cultural aspects; management; and biodiversity. The decline of groves threatens the biological diversity of the groves as well their associated socio-cultural systems. There is a need to document the socio-cultural systems associated with the groves and also biodiversity changes.

Arinyo i Prats, Andreu, Nancy Turner, and Shauna LaTosky. **The need for Cultural Keystone Practices thinking** (Session VI. Cultural Keystone Places and Historical Ecology (Part 1))

Cultural Keystone Species and Cultural Keystone Places feature prominently in ethnobiological research and literature; these concepts emphasize and advocate for the well-being of traditional societies and their environments. However, little to no research has focused on cultural practices that extend beyond and may exist independently of CK Species and Places; we propose naming these "Cultural Keystone Practices". For example, many Cultural Keystone Practices, such as harvest rituals and fire-making, are independent of a specific place or species, but are nevertheless essential to a group's continuity, identity, and social health. Therefore, we argue that the concept of "Cultural Keystone Practices" fills a gap in our terminology, allowing us to categorize cultural elements that have partial or no connection to places or species. This critical concept can help identify and protect essential immaterial cultural heritage, currently endangered in many parts of the world.

Armstrong, Chelsey Geralda. **Historical-Ecological Approaches to Challenging State Conservation Practices in Lax'yip Gitxsan** (Session IX. Cultural Keystone Places and Historical Ecology (Part 2))

Historical narratives crafted by heritage power brokers (archaeological consultants, regulators) often limit landscape-scale considerations, and pale in comparison to the referents and scale of histories known among, for example, Gitxsan Wilp (House) territory owners, teachers, and knowledge holders. In reviewing historical-ecological and House-based approaches to heritage conservation in British Columbia, this research will assess the strategies and opportunities involved in re-defining the Lax'yip (territories, waters) as cultural keystone places. We consider keystone places as a potential avenue for non-Gitxsan power brokers to better understand biocultural phenomena as both heritage and historically contingent inheritances.

Baitzel, Sarah. **Urban Healthcare in the Past: thinking through well-being and medicine in ancient citiesx** (Session II. Politics of the Urban Body: Bioarcheological Studies of Ancient state)

Traditional resources related to the human body, such as foodways, medicines and body modifications, underwent profound transformations as a result of urbanization in the past. The transition to urban life resulted in changes to environmental processes (subsistence, disease transmission, pollution) and social dynamics (inequality, labor, kin and gender relations, violence). These intersecting processes left visible marks on the human body that attest to the social and biological stresses experienced by urban residents. In this paper, I review case studies of urban bioarchaeology from around the world to explore how city dwellers in the past drew on traditional resource systems to mitigate the negative impacts of urbanism. What evidence exists for the continued use of deep-time or indigenous practices by urban communities? What do we know about the emergence of new resources related to food or medicine?

Basnet, Vinisha Singh. **Understanding Non-Timber Forest Products through Epistemological Pluralism: A Multi-Sited Ethnography of Decline in Lac**

**Production** (Session VIII. Knowledge Integration/Traditional Ecological Knowledge)\*

Addressing environmental crises requires a methodology that recognizes multiple ways through which stakeholders engage with such environmental crises. In this paper I use the framework of epistemological pluralism to examine the non-timber forest production system for "lac," a type of resin produced by insects of the species *Kerria lacca*. The work I present here is part of an action research project in a forest-dependent indigenous village in Chhattisgarh, India that aims to enhance the livelihood opportunities around lac rearing. I conducted multi-sited ethnography using the framework of epistemological pluralism to understand a crisis in lac production. I ask "Why is productivity of lac declining?" from the epistemic vantage points of stakeholders located within the larger network and situated at the level of: (i) village community, (ii) non-government organization, and (iii) national-level science institution. I conclude by highlighting that this approach to problem diagnosis resulted in a nuanced understanding of the crisis and encouraged a sustainable intervention.

Belmaker, Miriam. **Mammal Dental Tribology as Paleoenvironmental Proxies** (Session XX. Measuring up to Environmental Archaeology: New Biometric Applications to the Study of Past Plant and Animal Remains)

Reconstructing the environment is critical for understanding past human-environment relationships. The common use of species presence-absence and relative abundance works well across large spatial and temporal resolutions and with species with unique environmental requirements. However, this is not necessarily the case. Periods and areas where species have remained static over long periods preclude using these methods. Using paleodietary proxies can aid in this conundrum. Mechanical properties of food leave distinct wear patterns (tribology) on the teeth of herbivores and can be used as paleoecological proxies. For example, fossils with signs of dental wear indicative of grazing can be interpreted as the presence of grasslands. At the same time, evidence for browsing can be used to suggest more closed and wooded habitats. New imaging methodologies, e.g., white-light confocal microscopy and scale-sensitive fractal analysis, allow for more robust conclusions. This paper will discuss the use and misuse of dental tribology in archaeology.

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\* Barbara Lawrence Award submission

Bey, Bridget. **Evaluation of Early Life Course History in Late Pre-Hispanic Andean Populations (Southern Peru, 800-1500 CE)** (Session II. Politics of the Urban Body: Bioarcheological Studies of Ancient state)

Around the world, the shift towards more urban environments coincided with an increase in childhood morbidity and mortality, which consequently impacted rates of growth and development throughout childhood and adolescence. To analyze the effect of urbanization on puberty in the late pre-Hispanic Andes (800-1500 CE), I explore the relationship between development and stress/disease patterns from three Peruvian skeletal collections. I present data on 217 individuals, 5–30 years old, from Omo M10, Chen Chen M1, and Estuquiña M6. These three populations broadly represent the sociocultural contexts of the late pre-Hispanic Andes—hierarchical social organization, dense semi-urban populations, and maize-based agriculture—two population types (highlanders and highland descents), and two chronological periods (political stability and regional conflict). Evaluation of these three samples, alongside an urban Medieval Sample, will help us better understand differences related to childhood morbidity, growth, and development in the pre-Hispanic Andes and across global populations.

Brandes, Claire. **Applying Information Theory To Osteometric Data: A New Approach To Constructing Demographic Profiles Of Faunal Assemblages** (Session XVII. Virtual Poster Session)

Zooarchaeologists need flexible methods to interpret demographic profiles (e.g., age, sex, taxonomic identification) of faunal assemblages considering that (a) different skeletal elements will be present, and (b) remains will exhibit varying degrees of preservation, depending on the site. Faunal analyses will therefore benefit from the application of interdisciplinary quantitative methods in novel ways. Shannon's informational entropy is a fundamental concept in information theory that measures the information content of variables within a system. This methodology has been used in ecology and zooarchaeology as a measure of biodiversity in and between ecosystems and sites. This research demonstrates the application of Shannon's entropy to osteometric data with both micro and macrofauna. By using this measure, faunal analysts can identify which metric variables are most informative of characteristics like age and sex. Further research should result in the development of novel indices to elucidate demographic characteristics of a given population.

Bye, Robert and Edelmira Linares. **Proto-ethnobotany radiated from the "Gateway to the American West" (St. Louis)** (Session III. History and Folklore)

St. Louis, "Gateway to the American West", was the origin and terminus of ten naturalist-travelers who contributed to the proto-ethnobotanical period of western North America during the first half the 19th century through observations on useful plants that attracted their curiosity as well as provided sustenance and remedies for their survival. Between 1790 and 1869, they penetrated the trans-Mississippian West (that was the object of geopolitical disputes) and described its flora (that was subjected to academic emulation) on behalf of the United States, Great Britain, France, Russia, Spain and Mexico and offered insights

into western North America's biocultural resources. A diachronic analysis using a Continuity Index of 100 plants reported in journals and as specimens suggest that about three-quarters of these vegetal biocultural resources were retained by Native Americans/Pueblos Originarios during the 20th century. Examples of the antipodal poles of the continuity gradient are represented by *Pediomelum* and *Clematis*.

Cajtak, Karl. **Animal husbandry and environmental inferences in Sant Esteve d'Olius between the Iron Age (4th - 2nd c. BCE) and the Middle Ages (10th - 14th c. CE)**  
(Session XVIII. Virtual Poster Session)

In this poster we discuss biometric data and contextualize it with data from the surrounding areas (present-day Catalonia). Sant Esteve d'Olius stands out for its evolution from a specialized nucleus in the Iron Age to an ecclesiastical settlement in the High Middle Ages. Data from this site fills a geographic gap in the zooarchaeological analysis of Northern Iberia between the coastal lands and the Occidental plain, and suggests variation between the two periods, which has previously been interpreted as reflecting changes in the socio-political structure and the food production system (Nieto-Espinet et al. 2021). Such changes in the zooarchaeological data reveals the importance of the politico-economical structure as well as environmental factors on animal husbandry, food consumption and the livelihood of ancient peoples.

Cannon, Carrie. **Natives and the Native Plant Society** (Session VIII. Knowledge Integration/Traditional Ecological Knowledge)

The Hakdagwi:va Peach Springs Chapter of the Arizona Native Plant Society is the very first ever Native American Plant Chapter in Arizona, possibly the country! Formed on the Hualapai Indian Reservation by Natives, the chapter just celebrated its 1 year anniversary. Arizona is actually home to more Indigenous tribal lands than any other state in the country with 27% of the state made up of reservations totaling more than 20 million acres. The ancestral lands of the Hualapai Indian Tribe include a region within the world that is botanically distinctive and rare. Located within the eastern extent of the Mojave, and northern extent of the Sonoran Deserts, present and ancestral lands are situated within a unique bio-region. This presentation will share about the successes of our Native led Peach Springs Chapter of the Arizona Native Plant Society.

Carney, Molly. **What Are the Ethical Implications of Ai and Environmental Archaeology?**  
(Session XIX. Advances in Data Science and Environmental Archaeology)

ChatGPT and other writing tools like Grammarly and QuillBot use generative artificial intelligence (AI) language models to generate comprehensible responses and written content. All three programs work when users input questions, prompts, notes, or general queries and then ask for specific output such as paragraphs, short essays, or annotated code. These programs draw on trained data in their responses. However, all programs save input content, so human trainers and developers can review and analyze user-generated inputs before allowing content to be added to future model versions. What happens, then, when AI is "fed" cultural heritage information as an input? Who then has access to that information? How can we ethically work

with archaeological or ethnobiological data and AI without compromising our commitments to descendent communities? This poster explores some of these questions and looks closely at how environmental archaeological data is archived in various AI programs and offers some initial thoughts on using AI ethically.

Charles, Caitlyn, and Alison Ormsby. **A Review of the Potential Interpersonal Applications of Cacao** (Session I. Cassava and Cacao)

Research has been conducted about the health benefits of cacao, indigenous uses, and psychoactive effects. However, minimal research has been completed regarding the implications of high-dose cacao consumption in interpersonal settings. People globally who run and attend 'cacao ceremonies' claim that cacao's psychoactive effects lead, in many users, to euphoria, emotional openness, and disinhibition. They assert that these effects make cacao an excellent addition to reflection and connection-building activities done in groups or in pairs; however, claims need to be researched and field tested. If validated, cacao could prove to be a useful complement to a range of interpersonal activities, from corporate team building to community building, to applications for romantic relationships or even therapy. A wealth of anecdotal reports support this notion, though they could very well be the result of confirmation bias. This presentation will present literature background on this topic.

Cormier, Levi. **Documenting Historical and Ongoing Sts'ailes (Coast Salish) Land-Use: Reconstructing Forest Garden Environments through Phytolith Analysis**

(Session XV. Cultural Forests)\*

Indigenous forest gardens are a historically widespread and integrated land stewardship system in the Pacific Northwest of North America. Western science has long overlooked these practices and it is only recently that archaeologists have begun to systematically and collaboratively study the material remnants of these practices. This research presents the results of phytolith analyses, reconstructing forest garden landscapes in Sts'ailes Territories (British Columbia). Furthermore, a province-wide comparative collection of modern phytoliths from culturally significant forest garden species was established to assess the extent to which diagnostic features of, mostly, perennial fruit shrubs can be used in archaeological contexts.

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\* Barbara Lawrence Award submission

Courtney, Sofi, and Phillip Levin. **How Do Boundary Spanning Researchers Navigate Within Settler-Colonial Institutions?: Understanding the Nuts and Bolts of Environmental Science Research Partnerships with Indigenous Peoples** (Session XI. Reflections on the Field)

There is growing recognition within settler scientific institutions of the importance of building meaningful, mutually beneficial research partnerships with Indigenous Peoples. Boundary spanners, or individuals who can function on both sides of a social or political divide, may be key to making this work possible. However, the currencies of scientific career progression may present challenges for scientists seeking to boundary span. We critically examine how environmental researchers are supported or impeded by mainstream scientific institutions while attempting to do boundary spanning work with Indigenous communities. Using interviews, surveys and a mixed methods analysis we find in our preliminary results that size, scale, and mission of the institution are highly influential on the type of support or barriers that researchers are encountering in their work. Furthermore, we found profound differences in funding and promotional structures between Canada and the United States that facilitate or impede researchers seeking to boundary span.

Crowley, Jazlee, Brenna Prevelige, and Dee Denver. **Ethical Quandaries Concerning Invasive Spiritual Plants: *Ficus religiosa* on the Island of Kaua'i** (Session XXI. General Poster Session)

The Bodhi tree (*Ficus religiosa*), under which the Buddha became enlightened in India ~2,500 years ago, is highly significant to Buddhist cultures. Bodhi trees were introduced to Hawai'i in the 1900s by multiple conduits, including Buddhist-Japanese migrants. The Kaua'i Invasive Species Committee identified this plant as a High Risk Invasive, but also acknowledged its important religious relevance. To better understand this complex ecocultural issue, we conducted a transdisciplinary project that integrated genetics, biological fieldwork and community engagement at the Kaua'i Soto Zen Obon Festival. We studied seven trees around residential spaces in Kaua'i and found that the majority shared chloroplast DNA with the tree of enlightenment in India. We took part in Japanese Buddhist cultural activities, including an art project that utilized Bodhi tree leaves. Approaching this issue through an ecocultural transdisciplinary lens may inform the ethical quandary of how to balance the invasive yet sacred relevance of *F. religiosa*.

Dolan, Jessica. **Kanohkwa'tsheranákere, Where the Medicines Live: Ethnobiology in Service of Indigenous-led Conservation** (Session VII. Urban Ethnobiology)

Indigenous-led conservation and knowledge systems have gained significant recognition at the federal levels of the United States and Canada, as critical sources of environmental knowledge for research, policy, and planning, and for honoring nation-to-nation relationships with Indigenous nations. The Wisdom from Knowledge team has created a digital Indigenous Botanical Survey of the Greenbelt protected lands which encompass the Greater Toronto Area, Niagara Escarpment, and Oak Ridges Moraine. The survey incorporates Haudenosaunee and



Anishinaabe ethnobotany and plant ecology research, in service of uplifting and re-storying enduring Indigenous relationships with plants and trees within the Greenbelt. These learning tools are carefully designed for Native communities to restore and regenerate their language and biocultural relationships in their homelands. They are also intended for visitors to engage in place-based learning on these urban and peri-urban landscapes, and are robust tools for policy-makers to bridge knowledges when crafting equitable decision-making, conservation, and planning processes.

Dombrosky, Jonathan. **Two Years of Reproducible Archaeofaunal Reports at Crow Canyon Archaeological Center** (Session XIX. Advances in Data Science and Environmental Archaeology)

Scholars across various fields of research have noted a reproducibility crisis. At the heart of this crisis is the fact that many results are unverifiable because researchers have not provided raw data and/or sufficient documentation. The fields of archaeology, zooarchaeology, and ethnobiology have not eluded these discussions, and they would benefit from unifying open science and publication practices. Quarto is a technical publishing system that integrates multiple programming languages and exports a range of different file types. Every figure, statistic, and calculation in a fully formatted publication or report can be tied back to raw data using one file type. Here, I present a workflow for producing technical archaeofaunal reports from active projects at Crow Canyon Archaeological Center, which are integrated with a large multisite, relational database. Quarto has enhanced internal reporting consistency, aided collaboration, reduced writing time, and increased understanding of complex archaeological phenomena.

Dombrosky, Jonathan, Steve Wolverton, and Tessa McCright. **Assessing Inter- and Intraobserver Variability in Barbara Lawrence's Criteria for Identifying Pronghorn and Deer Astragali** (Session XX. Measuring up to Environmental Archaeology: New Biometric Applications to the Study of Past Plant and Animal Remains)

Barbara Lawrence published morphological criteria for identifying pronghorn (*Antilocapra americana*) and mule deer (*Odocoileus hemionus*) from skeletal remains in the U.S. Southwest, and these criteria are routinely used in the analysis of archaeofaunas across North America. Some criteria are often extrapolated to other related species, such as white-tailed deer (*Odocoileus virginianus*). Despite the widespread and general use of Lawrence's protocols, zooarchaeologists have not assessed whether these criteria discriminate taxa when larger sample sizes are considered or when the same taxa are evaluated from different geographic areas. Researchers have also not demonstrated that observers can identify these criteria. Here, we developed linear measurements to capture morphological criteria for identifying pronghorn and mule deer from the astragalus. We investigate intra- and interobserver variability in measurement error and determine the probability of successful taxonomic identification using the criteria. Our results offer a means to assess and thereby bolster data quality in faunal analysis.

Drew, Joshua, Katherine Lawson, Amanda Ford, Leah Rubin, Peter Hughes, Waisiki Sevakarua, and Bay Holmes. **The Species That Support The Services: Exploring Links Among Gender, Species and Ecosystem Services in Indigenous Coastal Fijian Communities** (Session VIII. Knowledge Integration/Traditional Ecological Knowledge)

Ecosystem services have been a major organizing principle for Conservation Biology for the past two decades. However, the links between the services provided and the actual species that produce those services can vary across and within communities and genders. In this presentation I will discuss the ways members of Indigenous Fijian communities prioritize the ecosystem services provided by mangroves and reefs and then link those priorities to lists of specific species (including medicinal plants and reef fish) that provide those services. Drawing on data gifted from Indigenous knowledge holders we conducted "Mangrove walks" and "fisher follows" to generate lists of species and the ecosystem services they support and discuss how these species lists can be used to structure conservation and management plans. Lastly, we will highlight how the results can be read through the lenses of both gender and multispecies ethnography.

Duan, Qimeng, and Guiyun Jin. **Understanding the Agricultural Management at Liangchengzhen, China** (Session XXI. General Poster Session)

Agriculture has long been recognized as a pivotal factor in the emergence of early civilizations. Investigating agricultural management practices within their historical context is essential for comprehending the development of social complexity. This study employs phytolith research as a powerful tool for uncovering critical aspects of water management and crop processing, both integral to ancient agricultural systems. Our analysis of phytolith assemblages at the Liangchengzhen archaeological site provides intriguing insights into rice cultivation in arid conditions and reveals shifts in crop processing patterns during the construction of moats. These findings shed new light on the intricate relationship between agriculture, water management, and the evolution of societal structures, offering valuable contributions to the broader understanding of early urban settlements.

Ezhevskaya, Anya. **Fungi in Slavic Folklore** (Session III. History and Folklore)

My presentation offers an overview of the role and presence of fungi in Slavic folklore. Mushrooms have for centuries held an important place in the eco-mythology of Slavic peoples. This is evidenced not only by the riddles, proverbs, and folktales such as *The War of Mushrooms (Voina Gribov)* that refer to fungi, but also by works of fine art and music created over the last two centuries. The intimate, homey relationship that Slavic people have with mushrooms is also revealed through the ubiquitous practices, even into the 21<sup>st</sup> century, of foraging for fungi, mushroom preservation through fermentation and pickling, and mycophagy. My presentation highlights some of the most notable examples of mycological interplay with Slavic folklore in the past and present and looks forward to changes in the relationship between

these peoples and mushrooms in a globalized, hyper-technical world torn by war and cushioned by financial prominence.

Fahey, Fionna. **An in Vivo Ethics for Seed Exchanges** (Session XVI. Food Resilience in a Changing World)

White supremacy, capitalism, and neoliberalism disrupt communal relationships to seeds and further harm local food systems and specifically Black, Brown, and Indigenous seedways. Food sovereignty, organic, and grassroots initiatives have used seed exchanges and libraries to confront these issues. Ethnobiologists and anthropologists have contextualized biodiversity, conservation, and seed politics to advance these struggles in solidarity. However, existing scientific and policy mechanisms for exchanging seed knowledge continue to isolate seeds from their social contexts and restrict the dynamic qualities of seeds to static exchange agreements. In this paper I draw on feminist anthropology, ethnobiology, and applied anthropological research with a national seed organization to interrogate these existing ethics of seed exchanges. I argue for an in vivo seed ethic (cf. Nazarea & Rhoades 2013), that refuses dominant neoliberal logics of scalability (Tsing 2021) and exploitation, to allow for living commitments to reciprocity; thus reflecting the dynamic nature of seeds, communities, and advocacy.

Fairbanks, Regina, and Jeffrey Ross-Ibarra. **Domestication is Nothing New: Maize Domestication Leveraged Preexisting Genetic Variation** (Session XII. Paleoethnobotany and Archaeology)

Domestication often involved radical morphological changes as plants adapted to novel anthropogenic environments. Understanding the origin of genetic variants underlying these changes has long been of interest. Despite the dramatic morphological differences between maize and its wild relative teosinte, research on a handful of well-described genes has found that maize domestication relied on preexisting genetic variation in ancient teosinte. But, researchers had concluded that one key trait and the genetic variation that causes it—exposed kernels and a mutation in the *tga1* gene—could exist only in cultivated populations. Using population genetic analysis of modern maize and teosinte genomes, we instead find that the key mutation in *tga1* likely predates domestication. Our ongoing genome-wide analysis investigates the potential contributions of preexisting genetic variation beyond well-studied domestication genes. While these patterns may partially arise from maize biology, we anticipate that our findings will yield insight into people-plant relationships associated with domestication.

Farley, Kate. **Mountain Midwives and Granny Women: Botanical Medicine for Reproductive Health in Ozark Folklore Collections** (Session III. History and Folklore)

This study focuses on plants used medicinally for gynecological and reproductive health concerns in the Ozarks, documented in folklore archives. The Ozark plateau is a rugged, hilly region that includes southern Missouri, northwest Arkansas, and small parts of eastern Kansas and Oklahoma. Due to its physical isolation from major population centers, the region's folk

culture—including uses of herbs—drew great interest from American folklore collectors in the first half of the 20th century. This study uses folklore records housed in university and library archives in Missouri and Arkansas to shine light on the way historical Ozarkers used herbs to treat gynecological concerns, including menstrual cramps, treating (or inducing) miscarriage, and childbirth. This study not only allows us a glimpse into the lives of women in the past, but it has particular relevance in a contemporary political climate in which access to reproductive health care is under threat.

Faruque, Mohammad Omar, John Richard Stepp, and Shaikh Bokhtear Uddin. **Biocultural Conservation of Neglected and Underutilized Indigenous Foods and Their Potential as Alternative Food Sources and Medicines in Bangladesh** (Session X. Ethnomedicine)

The indigenous communities of Bangladesh traditionally consume fruits and vegetables, which are unknown in other parts of the country. This study aims to record these lesser-known indigenous fruits and vegetables. In addition, the nutritional values and bioactivity of some selected species were investigated in order to introduce them as alternative foods and medicines on a larger platform. A total of 134 plants using information were documented. Considering their frequent uses, some plant species were selected to analyse their nutrient and medicinal values. Results showed that some species contain more fibre, carbohydrate, and fat than *commonly used species*, while some species exhibit good bioactivity, which was corroborated by the molecular docking analysis of identified compounds. The analysed fruits and vegetables proved to be praiseworthy as they contain substantial amounts of nutrients and medicinal values, which can be introduced as alternative sources of food and medicine in other parts of Bangladesh.

Field, Julie, Joy McCorriston, Scott Fisher, Kiana Frank, Samantha Kirgesner, and Kia'i Collier. **Microbes, Archaeology, and Community in Hawaiian Fishpond Restoration** (Session IX. Cultural Keystone Places and Historical Ecology (Part 2))

Our research focuses on the remains of Kapoho, a *loko ʻiʻa kalo* (fishpond that also grew taro) located at Waiheʻe, Maui. Incorporated within the Waiheʻe Coastal Dunes and Wetlands Refuge, which is managed and owned by the Hawaiʻi Land Trust (HILT), the 277-acre wildlife and cultural preserve has 93 archaeological features, remnants of native vegetation, and the most extensive fringing coral reef in west Maui. Our research program has completed the first season of fieldwork and laboratory analyses dedicated to the archaeological and microbial investigation of the fishpond, with the goal of exploring and understanding the antiquity of fishpond management, and Kānaka Maoli (Native Hawaiian) knowledge of critical biological processes. Our research has also sponsored workshops with the goal of lending archaeological and microbial information to the community-led effort to rebuild and restore the fishpond. Our research is part of a collective effort to restore ecological resilience in Hawaiʻi as part of traditional (and sustainable) cultural practices.

Flachs, Andrew. **Ethnobiology and Growth Skepticism: What Can We Contribute?**

(Session XI. Reflections on the Field)

Ethnobiologists are increasingly turning to the economic and political consequences of our interdisciplinary scholarship. In this talk, I ask what ethnobiology can contribute to a conversation skeptical of unfettered economic growth while cautioning against anti-growth traps like ecofascism or unequal austerity. Many ethnobiologists show how neoliberal capitalist growth reforms socioecological relations. But more interestingly, ethnobiologists have meticulously documented already-existing diverse economies and pathways of social reproduction: systems of socio-ecological and economic exchange that decenter growth as an economic truth. None of this necessarily means doing less. Ethnobiological attention to highly specialized local knowledge across time and place has shown that many systems can be productive and stable—they are just not scalable or easily transposed to a new context. Although we rarely frame our research as such, ethnobiologists have a unique, data-rich perspective on growth skepticism that is crucial to a 21<sup>st</sup> century marked by rising temperatures, inequality, and authoritarianism.

Flores-Silva, Alondra, School Community Perempitz, School Community Chancuellar, and Ramón Cuevas-Guzmán. **Children as Ethnobotanists: Rediscovering the Wild Plants in Southern Jalisco, Mexico.** (Session XIII. Urbanization and Local Knowledge)

Southern Jalisco, Mexico is facing fast environmental changes, due mainly to the deforestation of temperate and dry forests to grow blue agave and avocado. This makes it more difficult for local people, and specially children, to access the local forests which is leading not just to an enormous loss of biodiversity but also associated local traditional knowledge. Against these challenges, 52 primary-school aged children participate in an extracurricular program, learning some ethnobotanical tools to record the local knowledge associated with the wild plants in their communities and helping to build a school herbarium. Those activities have promoted both spaces for children to learn about their wild plants and opportunities for dialogue among the different generations. Since the start of the program and with the collaboration of parents and grandparents, it has recorded a total of 68 species with different uses (e.g. food, medicine, firewood, decoration, cattle feed and toys).

Ford, Anabel, Justin Tran. **Provisioning Ancient Maya Cities: Modelling Food and Shelter In the Maya Forest At El Pilar** (Session XXI. General Poster Session)

Traditional Maya land-use strategies have been maligned as primitive, yet they demonstrate persistence and resilience to this day. Denigrating the milpa forest-garden cycle as shifting agriculture fails to see it as an asynchronous cycle that includes open fields of annual crops, perennial succession providing products used in the home, and closed-canopy forests for fruits and construction materials. This poster addresses this issue using spatial analysis and traditional ecological knowledge from living Maya farmers. Combining settlement data and DEM to quantify slope thresholds, we examine the landscape of El Pilar. We test the limits of land use at El Pilar, explore potential variability for subsistence and construction at El Pilar, and investigate

strategies of traditional land use in the tropical Maya lowlands. The results guide a discussion of the sustainability of the milpa cycle within the Maya forest.

Forste, Kathleen, Amalia Pérez-Juez, and Alexander J. Smith. **Expanding Cultural and Natural Heritage Through Archaeology: An Application of CKP in the Medieval Mediterranean** (Session IX. Cultural Keystone Places and Historical Ecology (Part 2))

Menorca, one of the Balearic Islands off the Mediterranean coast of Spain, has multiple UNESCO designations: as a Biosphere Reserve (1993), and as home to an inscription on the World Heritage List, the Prehistoric Sites of Talayotic Menorca (2023). Thus these natural biota and prehistoric archaeological sites are deemed important to modern life – but there is a leap of nearly two millennia from prehistory to today. In this gap, during the medieval period (c. 10th–13th centuries), people developed landuse practices (including irrigation systems) which left traces that endure into the 21st century. We marshal archaeological data to investigate two questions: How can archaeology deepen modern connections to a landscape? Specifically, how can archaeological investigation of the medieval populations contribute to the deep chronology of people stewarding this island landscape? Using the framework of CKP, we connect to themes of memory and identity active in the archaeological research of the region.

Fugiao, Jumaine Mauricio. **Documentation of the Ritual Plants Used by the Isneg Community and Their Conservation Status in Dumalneg, Ilocos Norte, Northwestern Luzon, Philippines** (Session X. Ethnomedicine)

The Philippines, as one of the species-rich countries, is also a culturally megadiverse in ethnicity around the globe. Plants have been utilized in the country in many ways by various cultural communities generally for medicinal uses. But apart from these, plants are also utilized in rituals or magical purposes. The ritual beliefs of the Indigenous Peoples (IPs) use different plants or plant parts for ceremonies. However, ethnobotanical studies in the country are finite and no ethnobiological documentation in the province despite having several Ethnic groups in the Northern part of the archipelago. Hence, this situation calls to save traditional knowledge and culture to increase awareness of the conservation of ritual plants. This study aimed to determine the ritual plants of the *Isneg* community with the notes of; its conservation status and endemism. Also, to document the different rituals indigenous knowledge of the Isneg community in Dumalneg, Ilocos Norte.

Gamit, Sandip, and Hitesh Solanki. **Traditional Knowledge of Medicinal Plants Used by Tribal Communities in Tapi District, Gujarat (India)** (Session XVIII. Virtual Poster Session)

This study highlights traditional medicines used for treatment of various diseases by tribal communities living in Tapi district of Gujarat state, India. Extensive field survey was carried out during 2015 to 2018 in the study area. Information was collected from 16 well known traditional healers of different area through semi-structured quaternaries and personal observation during the field visit. In the present study a total 176 ethno-medicinal plants belonging to 64 families

and 155 genera, used against 67 diseases by various tribal communities were collected and documented. It is observed that some critical diseases like cancer, malaria, tuberculosis, diabetes and paralysis are treated by traditional healers using various parts of plants. Traditional knowledge is passed on orally from one generation to another from the ancestors of the traditional healers. This traditional knowledge is threatened due to modernization. Therefore, the documentation of traditional knowledge can be used for conservation and sustainable use of medicinal plants of study area.

Gosford, Bob, and Mark Bonta. **Garrkan: An Avian “Troublemaker For Fire”** (Session XIV. The Ethnobiology of Birds)

In 2017 colleagues and I documented preliminary research and findings on intentional fire-spreading behaviour by several Australian raptors. That publication, though primarily based on direct observations by non-Aboriginal land managers, briefly noted the centrality of Aboriginal knowledge of this behaviour to our research and identified that knowledge base as a future research priority. Following up on that work, we have concentrated on two primary research tasks. Firstly, reviewing interviews conducted between 2009 and 2017 with knowledge holders and land managers and second, further interviews with Aboriginal landowners, knowledge holders and land managers to 2023. In this presentation we will examine the important roles that Garrkan—the Brown Falcon, *Falco berigora*—is accorded as a landscape-scale land manager through the manipulation of wildfire, as a cultural actor in traditional ceremonies and in cultural practices and beliefs, and as a “troublemaker for fire.” We will summarise prospects for future collaborative research.

Grenz, Jennifer. **Centering Indigenous Cultural Resurgence to Improve Ecological Restoration Outcomes of Cultural Keystone Places of the Quw’utsun Peoples** (Session IX. Cultural Keystone Places and Historical Ecology (Part 2))

Many places of ancestral and cultural importance to the Quw’utsun Peoples have been recognized by settlers as important contributors to biodiversity. This recognition has resulted in settler-led ecological restoration efforts of cultural keystone places such as Garry Oak Meadows and the Cowichan Bay Estuary. While such efforts are well-intentioned, lack of understanding of pre-colonial baselines and implementation of fortress conservation practices have contributed to poor, long-term restoration outcomes. Our research alongside Cowichan Tribes is showing that centering cultural resurgence in restoration planning is a critical methodology that ensures the reciprocal, long-term human-land relationships required for successful outcomes. Our results have broad implications for land restoration that suggest that finding ways to strengthen human relationships to land (Indigenous or not), could provide the commitment and stewardship lands need from us to thrive into the future.

Haileselassie Assefa, Sewasew. **Embodying Culture Change: Examination of Health in 14-17th c. CE Populations of Mtwapa, Kenya** (Session II. Politics of the Urban Body: Bioarcheological Studies of Ancient state)

Urban environments can create or exacerbate physiological stresses resulting from high population density, sanitation issues, and the more explicit socioeconomic gradient limiting access to resources. Moreover, the broader processes that lead to urbanization shape diet and health of those in the urban environment but are experienced differently according to age, gender, status and religion. Urbanization of the East African Coast (EAC) during the Iron Age (1st c. BCE – 10th c. CE) and Islamic periods (10th – 15th c. CE) is associated with an increasingly hierarchical society impacting resource distribution. By thinking about the EAC, through the lens of embodiment, I examine the effect of sociopolitical changes on the health of individuals of various identities including age, gender, and socioeconomic status. Individuals from Mtwapa, Kenya included in this study provide a rare opportunity to understand the heterogeneity of health outcomes in the EAC at the individual, local and regional levels.

Hunn, Eugene. **The Aztec Fascination with Birds: Deciphering 16th-Century Sources in Nahuatl** (Session XIV. The Ethnobiology of Birds)

Documenting how local communities recognize and name the distinctive elements of their biodiverse environment provides a solid foundation for understanding how we humans engage the wider society of sentient beings, the core of the ethnographic enterprise. Among the earliest systematic ethnographies is Sahagún's encyclopedic documentation of Aztec life, accessible in the original Náhuatl, with a parallel English translation (Florentine Codex). The largest Codex volume is devoted to "Earthly Things," including a chapter describing "all the birds" (*tōtō-tl*). To translate the birds named, described, and illustrated in the Codex, I offer my best educated guesses as to the correspondence of each Náhuatl bird name to one or more Linnean taxa based on each bird's morphology, vocalizations, habitat, and seasonal movements, as described by the Aztec scribes. My confidence in my "educated guesses" varies, but I offer reasoned justifications for 131 of 135 categories named in the Codex.

Jiang, Han. **Exploring Health at the Human-Animal Interface During the Neolithic-Bronze Age Transition in China** (Session II. Politics of the Urban Body: Bioarcheological Studies of Ancient state)

Past studies on topics of ancient health in Northwest China tend to focus on the consequence of agricultural practices or subsistence changes; less attention has been paid to the effects of husbandry on human health. Between the 6th and 2nd millennium BCE, a period witnessing the globalization of foodways and transition from Neolithic to Bronze Age in China, animals domesticated in Southwest and Central Asia were introduced to China and integrated into the local economy in varying ways. Specifically cattle were folded into the existing pig-raising system while sheep/goats were managed within local grazing landscapes in Northwest China. Here, I review the current state of knowledge on human disease landscapes in China between the late Neolithic and early Bronze Age in the context of different husbandry practices. In doing



so, I address the localized effects of animal management strategies on human health with a focus on the changing sociopolitical landscape.

Johnson, Emily, Douglas Kennett, Taylor Mori, and Amber VanDerwarker. **Archaeological Insights into Nixtamalization: Tracing the Origins of Cultural Tradition** (Session XII. Paleoethnobotany and Archaeology)

Nixtamalization is a critical culinary practice that improves the nutritional content of maize by treating the kernels with an alkaline solution that converts niacin into a biologically absorbable form. Grinding the nixtamalized maize produces *masa*, which can then be transformed into foods such as tortillas and tamales. The role of maize as a staple food was essential to significant population increases, rising urbanism, and the expansion of political complexity in ancient Mesoamerica. Although UNESCO has recognized the significant cultural and nutritional impacts of nixtamalization dating back to at least the early Classic period (250–800 CE), there is a critical research gap related to the origin and dissemination of this culinary practice. As part of an ongoing project tracing the first uses of nixtamalization, the starch granule evidence presented here from the Soconusco region of Mexico suggests that nixtamalization was practiced far earlier than previously suggested.

Johnson, Toni, and Alex McAlvay. **African Cereal-based Brews: Cultural Heritage and Nutritional Importance** (Session XXI. General Poster Session)

Micronutrient deficiency, or hidden hunger, is a global challenge that affects hundreds of millions of people each year. Traditionally, fermentation has served as a practice to enhance nutrient availability, mitigate anti-nutritive compounds, and provision probiotics. In many African nations, traditional beers, often characterized by low alcohol content, are crafted from a wide range of crops. Despite their nutritional richness, these beverages remain largely understudied. As diets change and growing culture shifts to a focus on quantity, the importance of these traditional beers can be overlooked despite their contribution to nutritional balance and economic and socio-cultural well being of local peoples. The persistence of these drinks is threatened by introduced foods, changing lifestyles, and global development initiatives that neglect the value of traditional foodways and crops. We provide a review of African beers, taking into account cultural contexts, fermentation processes, and nutrition. We discuss the prospects of fostering continuity and revitalizing knowledge, production, and utilization of African beers.

Kane, Stephanie C. **The Choreography of Biodiverse Belonging: Flamingos, Spoonbills, and Godwits Foraging in Lisbon's Mudflats** (Session XIV. The Ethnobiology of Birds)

This paper presents my open-ended experiment using ethnographic methods to ask biological questions about the socio-spatial dynamics of bird foraging activities in urban edge habitat. Most days for six-weeks before and after low tide in fall 2023, I assumed my post on top of an outlet pipe to record observations in an estuarial node of the East Atlantic flyway. The resulting landscape drawings and text, Android phone photos and video harmlessly capture small flocks moving linearly along the water's edge and as clustered companions spreading out across the

mudflats, their bills rarely lifting up from the bubbling sediment: a thick description of biodiversity. Data analysis will characterize the gestures, body shapes, and foraging styles of flamingos, spoonbills, and godwits as they enact the 21st century trophic ecology of waders. The findings will highlight multi-species urban liveliness in a revitalized and densely populated post-industrial coast and pose questions about the nature of site fidelity and belonging.

Kiahtipes, Christopher, Olivia Young, Benjamin Huebner, Janell Jean-Baptiste, Lauren Koerner, Amanda Malerba, Jaime Rogers, Haille Skinner, and Riley Stone. **Assessing a Non-Destructive Method for Reconstructing Fire Activity in Sedimentary Records** (Session XX. Measuring up to Environmental Archaeology: New Biometric Applications to the Study of Past Plant and Animal Remains)

The reconstruction of past fire regimes through physical and chemical analysis is critical to understanding human-ecological dynamics and their influence on past and present landscapes. Quantification of macroscopic charcoal accumulation in sedimentary archives provides reliable information on fire frequency and the vegetation types burned. Established methods for charcoal quantification utilize chemical preparation methods that are destructive to non-charred macrobotanical remains. Using macrobotanical remains in cores from the inner Congo Basin, we apply image analysis of samples under refracted and transmitted light to quantify charcoal accumulation and characterize local vegetation at the coring site. After classification of the plant remains based on color, size, and morphological characteristics, we compare our results with standard microcharcoal analysis using bleached samples. Our preliminary findings provide first insights into fire dynamics in Congo Basin swamp forests and provide a roadmap for developing non-destructive methods of analyzing macrobotanical remains and assessing microcharcoal accumulation rates.

Kopparambil, Sreelekha, and Alison Ormsby. **Sacred Grove Restoration in Kerala, India** (Session XV. Cultural Forests)

India is home to thousands of community-protected forests, called sacred groves. Sacred forests or groves are sites that have cultural or spiritual significance to the people who live around them. They represent the manifestation of a value-belief-norm system. These areas may also be key reservoirs of biodiversity. Sacred forests have been protected around the world for a variety of reasons, including religious practices or ceremonies, as burial grounds, and for their watershed value. The sacred groves of India are shrinking or disappearing due to cultural change and pressure to use the natural resources within the groves. We will share the case study of one sacred grove in Kerala, India, that was carefully restored by one family. This is a case of intergenerational communication and respect of belief systems, flow of knowledge transfer that supports biocultural conservation. Culturally protected sacred sites can have a role as key biodiversity conservation areas.

Lagalisse, Erica. **Beware the Psychedelic Metaverse: Primitive Accumulation, Productivity and Mind-Altering Plants** (Session X. Ethnomedicine)

Across contemporary psychedelic counterculture, 'plant medicine' is celebrated as healing and spiritual in association with indigenous ritual use, yet also imagined to be optimized in Silicon Valley—by splicing ayahuasca and psilocybin, for example. In the 1990s Ketamine was a 'horse tranquilizer' or 'designer drug', yet is now also celebrated as a 'psychedelic'—and semantically continuous with indigenous healing as a consequence. My ethnography explores New Age youth culture at massive psytrance parties across Europe, where I am positioned as a popular educator and interact with psychonauts, "chaos magicians" and other techno-utopian "digital nomads" who smoke synthetic DMT sprayed on plants and tell of "machine elves". I explore primitive accumulation in relation to the legalization and medicalization of mind-altering plants, and how participants in the neoliberal "psychedelic renaissance" shift between celebrating nature and its improvement, wherein indigenous knowledge is referenced and displaced in the marketing of psychedelics for workplace use.

Latosky, Shauna, and Olisarali Olibui. **'Without Girarri (African Wild Olive), We are Not Mun (Mursi)': Building a Case for "Cultural Keystone Places" in Southern Ethiopia** (Session VI. Cultural Keystone Places and Historical Ecology (Part 1))

Wild olive trees (*Olea europaea* subsp. *africana*) grow in the highland areas of Southern Ethiopia and are of vital importance to Mursi agro-pastoralists for health and social well-being. Travelling often over great distances, Mursi men harvest and carry heavy loads of bark to their communities where it is prepared as a purgative and/or ritual offering. Today, it is becoming increasingly difficult for the Mun to access *girarri*, as a result of park policies, inter-ethnic conflict, illegal harvesting and strategic government support for sedentary agriculture. In this paper, we consider the concept of "Cultural Keystone Place" (Cuerrier et al. 2015) for understanding how *girarri* is connected to culturally salient practices that support Mursi health and well-being, and for convincing local park authorities to improve sustainable access to such important resources and places.

Lepofsky, Dana, Sean Markey, and The XLAP Team. **The Xwe'etay/asqueti Archaeology Project: Historical Ecology of a Forgotten Cultural Keystone Place** (Session VI. Cultural Keystone Places and Historical Ecology (Part 1))

Historical ecology can be a powerful way to document the history of places with which descent communities strongly connect today. It can also be a powerful tool for re-awakening cultural connections to culturally imbued places. This is particularly so in highly colonized landscapes, where the tangible evidence of long-term Indigenous presence may be less evident. The Xwe'etay/Lasqueti Archaeology Project ([www.lasquetiarc.ca](http://www.lasquetiarc.ca)) focuses on the historical ecology of one small island in western Canada. It weaves together archaeological data, interviews and archival research on ecological change, ecological mapping, with community-centered outreach that brings together the descendent and settler communities connected to Xwe'etay. We documented a long-term and significant Indigenous occupation of the island. As a result, the

connection to Xwe'éta among descendent communities has deepened. For many of the island's settlers, their connection to this place has also been enriched, including a new understanding of what it means to honor Indigenous heritage.

Lopez Rojas, Maria, and Molly Carney. **Preliminary Results on Wood Resources in Site 45PO358** (Session XXI. General Poster Session)

In the Pend Oreille Valley of northeastern Washington State, USA, intensive plant food processing sites are quite common. In this area, the site 45PO358 offered an opportunity to examine how and when these places formed, why people choose these locations, and how they made bulk plant food processing and storage decisions. Consequently, this study aimed to identify fuel wood used in Kalispel food systems and preparation practices. For this study, bulk soil samples were collected during archaeological excavations, and floated to extract macrobotanical remains, including charred and partially charred wood. The data collected from nine features indicated an abundance of gymnosperms. Overall, the results suggested practices for selection and treatment of wood, as well as uses of wood fuel for food processing (i.e., roasting, drying). We further compare our results with other contemporaneous sites ca. 3,000 cal BP throughout the valley to explore inter-site patterns in fuel use.

McAlvay, Alex, Seid Hassen, Asmare Dejen, Endale Amare, Zemedede Asfaw, Mohammad Al-Zein, Marina Mosulishvili, Emma Burnett, John Letts, and Anna DiPaola. **Remembering Resilience: Supporting and Revitalizing Traditional Mixed Grain Cropping in Ethiopia and the Republic of Georgia for Climate Tolerance** (Session XVI. Food Resilience in a Changing World)

Wheat, barley, and other small grains face substantial yield losses under all climate change scenarios. The sowing of maslins, or mixtures which combine multiple grain species, was formerly widespread in Eurasia and northern Africa, and continues to be employed by smallholder farmers in some parts of the world, where it may represent a risk management strategy for climate variability. We carried out interviews and field experiments in Ethiopia and the Republic of Georgia to document the use of cereal mixtures as a resilience strategy, and understand their agroecology. Most interviewees reported that the mixtures afforded drought resistance, fungus resistance, and other advantages, but had declined or ceased due to exogenous pressures factors, rather than their performance. Agroecological experiments indicated that they provide a means of increasing yield and potentially yield stability compared to some monocropped components. Revitalizing Indigenous and local strategies for climate resilience may provide a way forward.

Ming, Emma, and Molly Carney. **Comparing Domestic and Food Processing Paleoethnobotanical Assemblages** (Session XXI. General Poster Session)

Archaeological and paleoethnobotanical research done along the Pend Orielle River in Northern Washington offers insight into the ancient food ways of the Kalispel Tribe. Part of our contemporary collaborative work seeks to understand the Tribe's history of food security and

provisioning practices. In this poster we draw on the findings of the Calispell Valley Archaeological Project report to look at one pillar of food security: availability. We show that past food availability can be traced through the botanical remains among both camas processing sites and residential sites. Through this record, it is clear that camas processing sites were carefully curated while in comparison residential sites held much more diversity in botanical remains. Our goal of this poster is to present these findings and discuss the modern applications of food security regarding the ancestral usage of camas in the Pacific Northwest. At the center of our discussion is the ability to have preference regarding access to food products.

Minnis, Paul, Giulia Mattalia, Natalyia Strymets, and Renata Soukand. **Ukrainian Plants Consumed as Famine Foods during the Holodomor, 1932–1933** (Session III. History and Folklore)

The *Holodomor* (1932–1933) was a politically driven, genocidal famine that killed millions through starvation and disease, as well as disrupting Ukrainian society and agriculture. Through the analysis of various archival sources, particularly survivor narratives, we obtained information about 70 plants used as famine foods, plants not customarily eaten and those eaten in unusual quantities or ways during the *Holodomor*. Residual parts of crops represented a large number of these famine foods. A wide range of native plants were also consumed. The general inventory of Ukrainian famine food types is similar to those from other major global famines.

North, Joel, and Molly Carney. **Ethnobotanical Uses of the American Beautyberry (*Callicarpa americana*)** (Session XXI. General Poster Session)

The American beautyberry (*C. americana*) is a member of Lamiaceae native to the American Southeast, characterized by its bunches of small, bright purple berries. Historical accounts detail the preparations of *C. americana* used by Southeastern Indigenous groups to treat several ailments, including dysentery, arthritis, and fevers. As recently as the early 20th century, Rural Euroamericans used the leaves of *C. americana* as an insect repellent for themselves and domestic animals. Two biologically active compounds, callicarpenal, and intermedeol, were isolated from *C. americana* leaves and demonstrated experimentally to be as effective as DEET against common mosquito species and deer ticks. In the summer of 2022, I spent a couple of days processing Beautyberry leaves to extract the essential oil and found it effective against mosquitos in Central Arkansas. Further study into the viability of these compounds could prove important in producing sustainable insect repellents in the future.

Pérez, Darío, Anne Duputié, Boris Szurek, and Sophie Caillon. **Agricultural Practices Involved in the Spread and Diversity of a Cassava Bacterial Pathogen in Small-scale Farms of Colombian Caribbean** (Session I. Cassava and Cacao)

Colombian Caribbean region contributes significantly in the national cassava production, despite major socioeconomic constraints. Among the latter, Cassava-Bacterial-Blight (CBB), a disease caused by the bacterial pathogen *Xanthomonas phaseoli* pv. *manihotis* (*Xpm*), leads to irreversible damage to plants, impeding growth and productivity. Aspects such as local genetic

diversity, the impact of farming practices, and the social context on *Xpm* epidemiology have yet to be determined. In this sense, we will show, through biocultural approaches, the role played by local knowledge and socioeconomic factors on the occurrence and transmission of CBB within a village where cassava is cultivated at a small-scale. Our findings show that the changes of agricultural practices and the cassava cuttings circulation system strongly impacts the spread and diversity of *Xpm*. This information can be a key element to improve our understanding of the pathogen population genetic structure and dynamic to improve early detection and sustainable control of CBB in cassava crops.

Pierotti, Raymond. **Myth and Scientific Insight** (Session III. History and Folklore)

Myths are considered to be traditional stories, especially explaining some natural or social phenomenon, and are typically assumed to involve supernatural beings or events. This assumption means that important scientific insights contained therein are missed or ignored. Events where direct causation is not obvious are sometimes characterized as being the result of "spiritual influences," equivalent to attributing quantum mechanics to spiritual influences, e.g., "Maxwellian Demons." I present three examples: 1) The TEK based idea of the existence of *Keepers of the Game*. i.e., entities that controlled availability of game animals, 2) Creator figures, typically nonhuman driving the origin of cultures and ecological communities, and 3) Existence of previously existing lands and cultures swallowed up by water. All of these have been revealed to be based on actual natural phenomena unknown until the late 20th and early 21st centuries. Thus, all were based on scientific knowledge rather than imagined supernatural causes.

Rahayu, Yen Yen Sally. **Examining the Potential of Wild and Underutilized Edible Plants in Improving Nutrition, Health, and Wellbeing: A Case Study in a Sundanese Community in West Java, Indonesia** (Session XVI. Food Resilience in a Changing World)

Globally, current food systems rely on a narrow range of low-nutrient plant species, overlooking historically used nutrient-rich plants, particularly in indigenous and rural diets, including Indonesia. The global movement to mainstream biodiversity for food, nutrition, and health has gained momentum, emphasizing underutilized resources. Wild and underutilized edible plants (WUEP) have emerged as promising solutions to public health and nutritional disparities, yet broader adoption lacks conclusive evidence. This study, conducted among the Sundanese community in rural West Java, Indonesia, addresses this gap by examining WUEP's potential to enhance nutrition and health. The research, employing mixed methods including ethnobotany and dietary intake surveys, examines the consumption and nutritional significance of WUEPs and their potential impact on health and well-being through a standard self-evaluated health assessment (SF-12) of 107 rural women.

Rietjens, Ricky, Gretel Kiefer, Ingrid Felsl, and Grant Fessler. **Plants of Concern, A Community Science Rare Plant Monitoring Program** (Session VII. Urban Ethnobiology)

Conserving plants is crucial for the future of the natural world and humanity. With nearly 30% of native plant species in the U.S. facing extinction, threats such as habitat loss, invasive species, and climate change persist. Addressing this, the Plants of Concern (POC) citizen science initiative by the Chicago Botanic Garden trains community members in rare plant monitoring. Utilizing the POC mobile app, volunteers assess the health of endangered plants, generating crucial long-term data. This information guides natural areas adaptive management practices while also facilitating research into rare plant population dynamics. Collaborating with researchers, POC plays a pivotal role in providing baseline information and aids the state in evaluating rare plant distribution for threatened and endangered species listings. Through these efforts, POC serves as a crucial link connecting people and the environment to safeguard the rich tapestry of plant life, preventing the permanent loss of species from the landscape.

Robinson, Alyssa Jeanne, Jean-Thomas Cornelis, and Chelsey Geralda Armstrong.

**Quantification of Soil Properties and Nutrient Dynamics in Indigenous Forest Gardens of the Pacific Northwest** (Session XV. Cultural Forests)

Indigenous peoples in the Pacific Northwest actively managed forests for millennia, yet scholars know little about the extent to which their management practices impacted soil properties. Recent research has shown that the legacies of historical peoples' active management of temperate forests can still be observed today in native plant foodsheds called "forest gardens" composed largely of deciduous fruit trees and shrubs, growing near archaeological village sites. Forest garden ecosystems and plant foods were historically actively managed through practices such as burning, transplanting, clearing, and fertilizing. Historical soil management may play a vital role in maintaining these landscapes. Here we aim to investigate how ancestral practices and changes in vegetation properties affect soil properties influencing nutrient cycling and organic matter dynamics. To guide the revitalization of Indigenous forest garden stewardship, we partner with Kitselas First Nation to gain a deeper understanding of ancestral practices from Indigenous research methodologies.

Rodriguez, Amani, and Alex McAlvay. **Adapting the Wixárika Milpa: Interactions Between Climatic and Social Change** (Session XVI. Food Resilience in a Changing World)

Traditional farming systems can afford resilience to the impacts of climate change, but are also being adapted to cope with increasingly rapid changes. Understanding the relationship between climate adaptations and social changes in many Indigenous communities is important to inform ecological and cultural conservation efforts. Wixárika communities have used the milpa system to preserve ancient and sacred varieties of maize for millennia, along with squash, bean and chile varieties. To better understand how these traditional polycultures have been impacted by agricultural intensification and climate change, we carried out structured and semistructured interviews in the Wixárika community of Cerro de los Tigres, Nayarit, Mexico. The main

pressures that farmers have identified were rapid changes in rain frequency and intensity, and the increasingly threatening cotton bollworm. We document the various adaptive strategies employed in the community during this unprecedented time, as well as the potential ecological and cultural consequences of these changes.

Sachs, Nava, Sofie McComb, and Tara Martin. **Observing Relationships Between Indigenous-Led Deer Stewardship and Cedar Forest Health in the Salish Sea** (Session VI. Cultural Keystone Places and Historical Ecology (Part 1))

The Coastal Douglas-fir (CDF) zone in the Salish Sea is declining due to cumulative stressors, including hyperabundant black-tailed deer. Hyperabundant deer browsing simplifies CDF ecosystems, with trophic cascading effects impacting songbirds and pollinators. Deer impacts on Western redcedar forests of the CDF remain largely unknown and are studied herein by analysing plant communities with focus on culturally significant food species. Forests were compared between Penelakut Island (*Puneluxutth*), where deer are hunted by the Penelakut Tribe since time immemorial, Salt Spring Island and Galiano Island. On the latter islands, colonization has severed Indigenous deer stewardship, hunting is limited, and natural predators are extirpated. Surveys determined browsing pressure and the richness, cover, and diversity of plant species by forest layer, including traditional Coast Salish food plants. The results showcase negative relationships between hyperabundant deer and traditional food plants, emphasizing benefits of Indigenous ecological stewardship for CDF forest health and Indigenous food sovereignty.

Salywon, Andrew, and Wendy Hodgson. **Evidence for Prehistoric Agave Gardens of *Agave parryi* var. *parryi* (Agavaceae) near Habitations in Central Arizona** (Session XII. Paleoethnobotany and Archaeology)

Agaves were important plants to many prehistoric cultures for food and other uses. In Arizona, *Agave parryi* was reported to be found outside of its normal distribution and in association with archaeological sites in 1976- presumably, as a result of prehistoric human introduction. We report numerous *A. parryi* plants also in close association with habitation and agricultural features from a site near Prescott, Arizona. Prescott Culture occupation of the site, estimated from A.D. 1250–1400, is indicated by Black-on-Gray ceramic sherds and the architecture. This site is within the natural range of *A. parryi*. However, no other agaves were observed in the vicinity. Given the importance of agave in the economy and subsistence of prehistoric peoples and the ease with which various species of agave can be vegetatively propagated, backyard gardens such as the one documented here provide insight into how the process of agave domestication may have taken place.



Sehgal, Anju Batta. **Impact of Urban Transformations on The Indigenous Cultivation in Kullu District of Himachal Pradesh, India** (Session XIII. Urbanization and Local Knowledge)

Human perceptions vary between rural and urban environments, determining the degree to which people are able to coexist with biodiversity. It is important to identify sociodemographic factors that determine these local perceptions to adjust with conservation strategies in recognition of particular conditions of different human communities. Effect of urban or rural location where people live and knowledge and perceptions about indigenous plants has led to transformative changes. Urbanization leads to primary e.g., removal of existing vegetation and construction of urban infrastructure and secondary e.g., habitat loss, fragmentation and isolation, climatic changes, pollution of air, water, and soil, processes that represent many challenges to persistence of non-human species. All ecosystems are affected by the same broad factors, such as climate, substrate, resident organisms, relief, and history. Aboriginals of Kullu District of Himachal Pradesh have preserved the cultivation habit along with rural means of earning livelihood with little transformation.

Seupaul, Taylor. **Cultivating Knowledge: Establishing an Accessible Southwestern Macro Botanical Reference Collection** (Session XXI. General Poster Session)

This study addresses the scarcity of resources on Southwestern macro botanicals, emphasizing seed documentation within herbaria. Serving diverse disciplines like archaeology, anthropology, biology, botany, and agriculture, the establishment of reference collections organizes and preserves essential macro botanical specimens. By documenting native seed varieties in the Southwestern United States, the research aims to fill existing gaps, offering a user-friendly resource for both remote and hands-on applications. This collection, focused on various seed families, contributes to a deeper understanding of regional flora and supports crucial research in botanical fields. The resulting archive facilitates identification, comparison, and exploration of unique macro botanicals in the Southwestern U.S., promoting biodiversity appreciation and preservation.

Shay, Creighton (C. Thomas). **Paleoethnobotany on the Northern Edge of the North American Plains** (Session XII. Paleoethnobotany and Archaeology)

Over 2,600 charred seeds from 107 soil samples were found at the site of Kenosewun, the "place of many fishes," (also called Lockport, EaLf-1) situated along the Red River near Winnipeg, Manitoba. These plant finds cover more than three thousand years and include more than thirty genera, including goosefoot, amaranth, dock, hazelnut, and raspberry. Yet, the most noteworthy were over a hundred fragments of maize (*Zea mays*) dating to ca 1250–1450 CE. Apparently, maize was only grown and eaten during a couple of centuries at Kenosewun while small-seeded goosefoot and other plants were gathered or grown both before maize production began there and continued after it ceased. Archaeologists and historians have long hailed the introduction and ascendancy of maize as a staple food. However, in many situations in North

American history, maize was introduced but later abandoned, leaving many unanswered questions about such major changes in foodways.

Sheban, Karam. **Three Years of the Northeast Forest Farmers Coalition** (Session XV. Cultural Forests)

Forest farming—the intentional cultivation of crops in a forest understory—is a form of forest stewardship practiced around the world. In the face of environmental degradation, the practice, a form of agroforestry, is being increasingly recognized as a strategy to advance environmental goals while revitalizing cultural traditions and boosting the economics of forest-based livelihoods. This inspired the Northeast Forest Farmers Coalition (NFFC), a federally-funded initiative with a goal of building a community of practice around forest farming in the Northeast U.S. This presentation showcases the journey of the NFFC over three years. The project blends community-building efforts with research into forest farming approaches across the Northeast United States. This presentation reflects on milestones of the project, including the establishment of five Research and Demonstration sites, a burgeoning coalition of 500 forest farmers, and a region-wide mentorship program. We also look to the future of agroforestry in the Northeast and beyond.

Shebitz, Daniela, and Andres Ospina Parra. **Understanding Miyawaki Forests from the Ground Up** (Session VII. Urban Ethnobiology)

The Miyawaki Method of regenerating and rehabilitating forests is increasingly being adopted by urban communities globally. By planting fast-growing groves of native vegetation on vacant urban lots, communities are actively addressing environmental issues including flooding, heat island effects, and biodiversity. There are two objectives to this paper: 1) to present an overall summary of what is being done regarding microforests in formerly redlined communities and 2) to present data that uses soil microbial dynamics and quality as a means of predicting the future success of the microforests in providing suitable environmental conditions for vegetation. We focus on three microforests in urban New Jersey and compare soil and plant dynamics with adjacent un-planted sites (as controls) and an intact forest nearby (as a reference site). Our overall goal is for this paper to serve as a toolkit for other urban communities considering afforestation to combat the environmental effects of urbanization.

Soewu, Durojaye. **Sacrifices and rituals in ethno-biological practices amongst the Yorubas, West Africa: dynamics and implications for biodiversity conservation** (Session X. Ethnomedicine)

Appeasing gods, witches, and ancestral spirits constitute an integral part of the traditional healing practices of Yorubas. Ten classes of sacrifice were identified, some with proven efficacy. Response from astral realm could signify acceptance, when presentation is “consumed” within a stipulated time, or it could be “ignored” to indicate rejection. Most sacrifices have time and presentation-spot specificity. A wide variety of wild animals were utilized in preparing these sacrifices without consideration for conservation interests. Preparations involved animals under

varying degrees of threats and age grades. In addition to depleting populations, such requirements eat deep into the procreation base of populations, denying members the opportunity to participate in reproductive activities. There is an urgent need to improve the yield of these animals, in-situ, and ex-situ. There is also a need to reduce demand for, and utilization of, these resources through massive conservation education, extension services and capacity building for indigenous people.

Solankar, Saish. **Subsistence Hunting and Farming in the Lotha Peoples of Nagaland**  
(Session XVI. Food Resilience in a Changing World)

In parts of Nagaland, India, subsistence hunting and farming lie at the intersection of ecosystems, cultural identities, and subsistence. The Lothas, one of the major tribes of the state, follow such subsistence practices which create nature dependent identities and cultures. Here, I provide an ethnographic insight into such practices of subsistence, through hunting and farming, which give us insight into multispecies relatedness and socialities in the backdrop of historical missionization and within the context of an ongoing biodiversity crisis.

Stevens, Alison. **Breaking the NTFP box: Indigenous Food Sovereignty and the Restoration of *Allium tricoccum* in an Urban Forest** (Session VII. Urban Ethnobiology)

The categorization of species as Non-Timber Forest Products belies their diversity and relationships with the communities they coexist with, rendering them a sort of invisible commodity. This is especially true for culturally significant species that persist in urban forest ecosystems. Lack of protection and regulation can result in their overexploitation, eroding the practice of lifeways and food sovereignty by Indigenous communities. Here, I show how the iconic spring ephemeral herb, *Allium tricoccum*, more commonly known as the wild leek or ramp, exists at the nexus of ecological economics, food sovereignty, and urban forest renewal. Using a combination of field studies, spatial analysis, and community activism, I address the multiplicity of valuation surrounding *A. tricoccum*, and how it can inform restoration and conservation decision-making.

Stevens, Michelle. **Rising from the Ashes: Culturally significant plants and Traditional Fire Management at Bushy Lake, Sacramento** (Session XIII. Urbanization and Local Knowledge)

Bushy Lake is located within the lower American River floodplain, Sacramento, CA, in the sovereign territory of the Nissenan, Maidu and Miwok peoples. The Bushy Lake Eco-Cultural Restoration Project, initiated in 2015, has a primary goal of restoring culturally significant plants and wildlife habitat in a highly disturbed urban riparian landscape. Our hypothesis is that culturally significant plants are fire resilient due to thousands of years of Indigenous Traditional Fire Management, and provide resiliency to wildfires on site. A 2021 wildfire burned the entire site to the water's edge. Monitoring vegetation response to wildfire enables us to monitor and test fire resiliency. We will present the results of our post-fire monitoring. Our goal is to

maintain traditional stewardship practices, land access for materials and tending, restore cultural burning practices, prohibit use of herbicides and pesticides, and promote healthy and just relationships with land and non-human relations.

Stringer, David. **When the Foxglove Blooms, the Mackerel Will Come: A Cognitive Universal Applied to Local Ecosystems** (Session III. History and Folklore)

In this paper, I examine how conditional reasoning (Antecedent > Consequent), as a universal cognitive capacity, drives associations that govern human activities in particular ecosystems. It is well-known that in many Indigenous cultures, people correlate the behavior of plants, animals, or stars with their own planting, hunting, or gathering. However, even in non-Indigenous societies, knowledge of this type is manifested in regional folklore. In the UK, people on the island of Guernsey sing of how blooming foxgloves announce the arrival of the mackerel, and in Warwickshire, the stages of growing elm leaves indicate when to plant barley and kidney beans. In the context of the debate over universals and particulars in folkbiology, I draw on historical and contemporary sources to illuminate how a common cognitive principle drives highly localized ecological associations encoded in folk names, sayings, and songs across a broad range of cultures.

Teke, Ache, and Tonjock Rosemary. **Perception and Uses of Mushrooms by Local Communities of Kilum-Ijim, Northwest Region of Cameroon** (Session VIII. Knowledge Integration/Traditional Ecological Knowledge)

Indigenous knowledge on the role of mushrooms is fast declining. A survey was conducted in some ten local communities in Kilum-Ijim, northwestern region of Cameroon, to investigate the uses and perceptions of mushrooms by the indigenes. Semi-structured questionnaires, focus group discussions, and pictorial methods were used to collect information. Results revealed that mushrooms were used mainly as food and medicine. Local names were found to be a very important factor in distinguishing edible, medicinal, poisonous and substrate of mushrooms. Local knowledge of mushrooms as food and medicine still exists in all the ten village communities surveyed. Elderly men and women were more knowledgeable on the role of mushrooms than the younger generation. There is a need to preserve and document traditional knowledge of the different edible and medicinal mushrooms as the majority of this knowledge is lost as a result of death of elderly people, habitat degradation and migration of indigenes.

Tinao, Mark Joseph, Warren Joseph Dollente, Marlon Pareja, Jesiree Ann Bibar, and Ron Paul Emperador. **One Million Trees and Beyond: A Collective Initiative of Philippine Lasallian Family towards Environmental Stewardship** (Session XV. Cultural Forests)

The Philippines being one of the mega-diverse countries yet vulnerable to climate change. Guided by the Lasallian Brothers, the Lasallian Institute For the Environment (LIFE) has formulated the One Million Trees and Beyond Project (OMTB) in 2006, with the aim of mobilizing the then 16 Lasallian schools in the Philippines to formulate a more proactive response to deforestation. The project was set to plant more than one million trees by 2011 —

the centennial of Lasallian presence in the Philippines. The project intended to involve the Philippine Lasallian Family in sustainable reforestation and greening efforts. LIFE partnered and coordinated with various local communities including peoples organizations and indigenous communities. In 2022, this project had almost 1.7 million trees and continues to promote biodiversity conservation by exploring new and prospect sites especially for Philippine native trees. Way forward, OMTB has birthed the La Salle Botanical Gardens which aims to prioritize the conservation of Philippine native trees and plants.

Turner, Nancy, and C'tasi:a Geraldine Manson. **"Connecting to the Land": Snuneymuxw History Written in Places** (Session IX. Cultural Keystone Places and Historical Ecology (Part 2))

This presentation reflects and honours the history of the Snuneymuxw Coast Salish Peoples of the east coast of Vancouver Island, along the Salish Sea, as reflected in land-based stories, haunting images carved into rock, and the memories of contemporary knowledge holders extending over their lands and waters. Snuneymuxw territory has changed drastically since the first Europeans arrived, with vast areas being damaged over the decades by mining, clearcut logging, road construction and urban development. C'tasi:a, now an Elder, has witnessed many of these changes, but has taken immense efforts to identify, maintain and share Snuneymuxw place-based oral history and precious cultural heritage that she learned about from her own Elders. Here we provide examples of some key places that capture the past of the Snuneymuxw Peoples and hold it for future generations.

Walker, Erana. **Cultural Stewardship and Urban Restoration—The Case of Kaitiakitanga and Ecological Restoration in New Zealand Urban Areas** (Session VII. Urban Ethnobiology)

Relationships of Indigenous people to the natural world are expressed according to the locale, knowledge, and practices of indigenous communities. Māori (the indigenous people of Aotearoa New Zealand) trace lineage to nature that informs a cultural stewardship concept known as Kaitiakitanga. This concept advocates for the protection of kin of the natural environment and ensures lasting nature relationships prevail for Māori. However, cities present new barriers for Māori to maintain connections with the natural world and the expression of cultural practices and knowledge. This presentation shares survey data about the application of kaitiakitanga in urban spaces of Aotearoa New Zealand. The presentation reveals barriers that impact kaitiakitanga but also the implications of such barriers on ecological restoration in urban areas. The presentation shares the value of cultural stewardship knowledge and practice for the restoration of biodiversity but also the livelihoods of urban indigenous peoples.

Watson, Tyler. **Uncovering the Secrets of Datura: A Treasure Trove for Natural Products Discovery** (Session X. Ethnomedicine)

Throughout history, an array of plants have been documented for treating various ailments. Among which, species of the genus *Datura* stand out for their infamous use in both medicinal

and cultural contexts, as analgesics, hallucinogens, and poisons. Alkaloids, a prominent class of specialized metabolites, are celebrated for their medicinal properties, and *Datura* species produce a diverse range of tropane alkaloids, making them a significant resource for natural products discovery. Despite their medicinal potential, tropane alkaloids present contamination risks in numerous food sources, including teas, spices, grains, honey, and herbal supplements. Consequently, the development of new analytical techniques for identifying novel tropane alkaloids and detecting known ones has great importance. Employing analytical approaches using LC-MS/MS, we have found previously unidentified alkaloids in *Datura*. These findings not only broaden our comprehension of *Datura*'s metabolic diversity, but also offer insights into its traditional uses and evolutionary adaptations.

Wehi, Priscilla. **Traditional Foods, Change, and Resilience at Two Māori Community Events** (Session XVI. Food Resilience in a Changing World)

For many communities, hosting large gatherings brings families together, and food systems are central to these events. We partnered with two Māori communities in New Zealand to explore how these communities embody resilience in their food systems. We collected data from two community gatherings that have been held annually for >100 years. At Marokopa, volunteers returned from a variety of distant locations; at Tūrangawaewae volunteers generally walked or drove short distances to the gathering. Gifted contributions of food from local gardens continues a history of connection to traditional food systems at Marokopa. At Turangawaewae, most provisions were store bought, but there was a strong focus on healthy eating. Both events produced little waste. Despite a shift from self sufficiency in food systems, these communities demonstrate resilience in their hosting motivations, and a commitment to *kaitiakitanga* (stewardship) in their focus on healthy foods, recycling, food waste, and intergenerational learning.

Welker, Martin, and Welker, Martin. **Oh Deer, What Are You? Differentiating White-Tailed and Mule Deer Post-Cranial Skeletons** (Session XX. Measuring up to Environmental Archaeology: New Biometric Applications to the Study of Past Plant and Animal Remains)

White-tailed deer and mule deer occur over much of North America, with significant overlap in the western United States including Arizona. Though white-tailed and mule deer occupy different environmental zones, and can differ in size, they have similar skeletal morphology. When archaeologists have attempted to differentiate white-tailed deer and mule deer skeletal elements, they generally rely upon size as the distinguishing factor. In 2004 Jodi A. Jacobson developed a system for differentiating these species using post-cranial skeletal landmarks. We tested the reliability of individual landmarks in Jacobson's system by having volunteers perform a blind study using 34 modern reference samples from two collections curated by the Arizona State Museum. This analysis also enables us to test the consistency with which analysts with varying levels of experience could apply Jacobson's system.

Wolverton, Steve, Chelsey Geralda Armstrong, Jonathan Dombrosky, and Susan C. Ryan.

**Taphonomic Perspectives on Archaeological Faunal Abundance and Its Relevance to Identifying Cultural Keystone Places** (Session VI. Cultural Keystone Places and Historical Ecology (Part 1))

Archaeological sites are locations where past activities are physically manifested and defined by presence and density of material culture. This varies depending on the scale of past activities. Artifact absence does not mean a landscape was never a location of past activities. This is problematic in the legal world where Indigenous peoples use archaeological data to document land-use in cultural keystone places. We synthesize data collected by Crow Canyon Archaeological Center over decades to demonstrate variability in abundance of faunal remains from sites dating to A.D. 500–1300 in southwest Colorado. We infer how taphonomic variables explain discovery probability of remains. This data-rich study highlights variability in discovery probability of faunal remains (as one type of material culture) to demonstrate “absence” is possible within a location of past activities. Thus, land claims may require an assessment of discovery probability rather than a simple determination of presence or absence of cultural indicators.

Wooding, Stephen, and César Rubén Peña. **A River of Diversity: Cultural and Biological Variation in Amazonian Yuca (Cassava, Manioc)** (Session I. Cassava and Cacao)

Yuca (*Manihot esculenta* Crantz; also called cassava or manioc) is a key subsistence crop throughout the Amazon basin. Archeological and genetic evidence suggest that it was initially domesticated ~10,000 years ago on the southern margin of the region and then dispersed, diversifying under human pressure into myriad landraces. However, the specific influences mediating landrace development remain poorly understood. In this study, we sought to clarify them in a field investigation of cultural and biological variation on five tributaries of the Upper Peruvian Amazon. We identified 45 landraces, which growers propagated clonally, a strategy maintaining landrace integrity. Landraces were also phenotypically distinct and assigned traditional names, reflecting different planned uses. In addition, while most phenotypic measures were statistically associated, nutritional content was independent of others, and may be under independent selective pressure. Finally, we found little evidence of geographic population structure, a pattern likely explained by transportation of landraces by growers.

Zandvliet, Alyssa. **Characterizing Settler Colonial Land-Use Histories in the Cowichan River Estuary and their Subsequent Impacts on Quw'utsun Traditional Food Systems** (Session XXI. General Poster Session)

Using historical-ecological approaches, this research presents proposed pathways for better understanding settler colonial and Quw'utsun (Cowichan, Coast Salish) land-use histories over decadal and centennial scales. Focusing on the Cowichan River Estuary, a highly developed and industrialized inlet on eastern Vancouver Island, and in collaboration with Cowichan Tribes, this research will integrate primary source data (ship logs, trader diaries, early surveys), ecological surveys, and ethnographic interviews, to assess how land-use in the estuary has changed over

time. Preliminary results indicate that at the onset of early colonial incursions, the estuary was a dynamic food system characterized by forest gardens of Garry oak savannah, native fruit tree orchards, and intertidal root gardens. Within decades, commercial logging and farming resulted in a net turn-over in species and increased sediment loading (upwards of 2 m of sediment deposited in ~70 years), drastically reducing plant diversity and Quw'utsun food system resilience.

Zanghi, Marco, and Alex McAlvay. **Traditional Management of Leguminous Shrubs in Milpa System by Wixárika Communities** (Session XXI. General Poster Session)

Indigenous farming systems face pressure to change globally, with unintended cascading impacts on resilience and soil health. Mesoamerican milpa systems face rapid changes or complete abandonment in many regions. To understand the potential unanticipated agroecological consequences of shifting from traditional milpas to tilled monocultures, we are working with partners in Wixárika community of Xatsitsarie, Nayarit. In this area, the living roots of leguminous trees such as *ipa* (*Vachellia pennulata*) and *xuuyá* (*Vachellia farnesiana*) are allowed to persist in the soil, resprouting rapidly alongside crops after the aboveground parts are cut back before sowing. Our methodology involves conducting semi-structured interviews to gain insights into the management practices used and soil analyses to understand nitrogen fixation in these systems. This research aims to understand and raise awareness about the potential benefits of this understudied management practice.



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