

An aerial photograph of a field of agave plants. The plants are arranged in a somewhat regular pattern, with some larger and some smaller. The leaves are a vibrant green color, and the ground between them is a mix of brown soil and dry grass. The overall scene is a lush, natural landscape.

Agave Renaissance Summit

2023

PROCEEDINGS

Agave Heritage Festival, Tucson, Arizona



Executive Summary

The 2023 Agave Renaissance Summit as part of the Agave Heritage Festival in Tucson, Arizona was a first step to bring together a cross section of stakeholders connected to agave. 83 participants from a wide range of backgrounds including brand owners, producers, growers, ecologists, bartenders, and other forms of agave practice spent the first day of the festival focusing inwards.

Beyond the important goal of making new connections and learning from one another, our intention is to have our words lead to action to help shape agave production in a balanced manner in the Arizona-Sonora borderlands and beyond.

Participants self identified the topics of conversation using an open space conference model, the proceedings of which can be seen in this volume. Perhaps the clearest theme that emerged from every session is the need to consider and engage with agave as a whole system so that efforts reflect that Agave is diversity, culture, food, fiber, microbes, health, history, and more. This approach reflects a re-centering to peoples long-held relationship with agave and a paradigm shift away from an over romanticization of agave as a distillate that is fraying the ecological and social fabric of agave and communities.





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Key points raised in the various sessions:

Regenerative agriculture to address desertification

- ⊗ Agroforestry is the model to focus on, especially in the arid southwest.
- ⊗ Restoration, not monoculture.
 - ⊗ Native seeds and clones for restoration.
- ⊗ Understand and prioritize genetic diversity and local adaptation.
- ⊗ Consider the agave as an ecological element and system, not just an agricultural product.
- ⊗ Focus in urban environments too, transition from agaves as landscape features to agroforestry.
- ⊗ Agave byproducts as cattle feed.
- ⊗ Intercropping, polycultures.
- ⊗ Shift in focus beyond yields and quantity to ecosystem function.



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Community engagement

- ⊗ What are the local perspectives and voices? Especially from Indigenous Peoples, agave practitioners in Sonora, and other regions of Mexico.
- ⊗ Increase diversity and representation.
- ⊗ Agave as a community builder.
- ⊗ Consider and build cultural attachment and economic opportunity.
- ⊗ Honor and promote cultural identity.
- ⊗ Address critical societal needs and create and maintain viable livelihoods.

Demand driving loss

- ⊗ Over romanticization of agave.
- ⊗ Over focus on distillate that does not reflect the true whole system of agave.
- ⊗ Agave is diversity, culture, food, fiber, microbes, health.
- ⊗ Build informed consumers.
- ⊗ Drive market demand into a regenerative model.
- ⊗ Wise use of public lands in the U.S. and Mexico.
- ⊗ Market forces as a balanced approach with regulation.

Learn resilience from agave and the past

- ⊗ Less with more.
- ⊗ Water harvesting as a core principle.
- ⊗ Polyculture, intercropping with corn and other crops, especially annuals.
- ⊗ Multiple uses of the agave plant.

Agave domesticates

- ⊗ A need to increase the number of agave domesticates. However need to consider:
 - ⊗ Domestication as intellectual and cultural property;
 - ⊗ The plants and their propagules are rare, endangered, and difficult to acquire;
 - ⊗ Work with and following the lead of Native Peoples is essential;
 - ⊗ Oversight and care by experts is needed with such critical population levels.
- ⊗ Agave domesticates exist in a regulation/protection gap that greatly hampers conservation.
- ⊗ Need more dialogue with land management agencies to care for these agaves.

Need for informed oversight

- ⊗ Regulation details.
- ⊗ Quality standards.
- ⊗ Consumer info.

Expand human health component and the inherent diversity of the agave system

Storytelling

- ⊗ Build around characters.
- ⊗ Build rapport with the subject matters.
- ⊗ Stories and brands as knowledge vessels.
- ⊗ Connect across communities.
- ⊗ Inspire understanding.
- ⊗ Consider and explore many mediums.



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The next steps are many and multi-faceted. Yet, the conversations sparked at the Summit, in one of the over fifty events of the festival, and in each of our own spheres reflect a deep appreciation for the relationship between people and the agave plant that stretches back millennia. A grounding in this nuanced and long-time symbiotic connection that encompasses so many aspects of human interaction and ecological connections provides a path forward as the fabric of this relationship is strained. It is a foundation based on holistic understanding, inclusion, livelihoods, openness to diverse perspectives, and inspiration and teachings from the object of our devotion – *Agave*.

Benjamin T. Wilder
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Transparency in agave production

Block 1: Club Congress



Combined sessions:

Traditional agave spirits production without the use of additives (Chris Simmons)

Transparency in production and the reduction of the carbon footprint (Laura Papa)

Growing US trends of distillers using agave syrup to produce Agave Distillates (Marsella Macias)

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Chris Simmons

Discussion and Recommendations:

- ⊗ Regulation / Governing Body for production, classifications.
 - ⊗ Use of additives have classifications in the US through the TTB (Tax and Trade Bureau). Proprietary and distilled spirits (i.e., Fireball falls in this category);
 - ⊗ Tequila and mezcal are the only two that are identified under agave spirits;
 - ⊗ Opportunity to create a division that could regulate this to a finer degree?;



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- ⊗ California just passed two classifications that identify those distillates: no additives and the materials and production must all come from California.
 - ⊗ Marsella's counter: agaves are not native to the state - Biopiracy?
- ⊗ Standards of quality.
 - ⊗ Using real agaves grown in the US will change the final product profile, dependent on terroir;
 - ⊗ Water conservation: intercropping vs monocropping (sets up for drought);
 - ⊗ Additives: How to promote traditional producers to consumers about what goes into the process, and have transparency through government sites that identify these:
 - ⊗ CRT (Consejo Regulador del Tequila, Tequila Regulatory Council)
 - ⊗ CRM (Consejo Regulador del Mezcal, Mezcal Regulatory Council)
 - ⊗ TTB (Tax and Trade Bureau)
- ⊗ Dollar vs Peso: Economic Security Risks between MX and USA.
 - ⊗ Business and work taken from MX to cater to US companies.
 - ⊗ Higher quality and traditional products: high demand, but it becomes more difficult to provide inventory, especially, when importing.
 - ⊗ Limits the profitability for small producers.
 - ⊗ Hold industry/ bartenders responsible?
 - ⊗ Take action through word of mouth.
- ⊗ Resources for Information (e.g., Tequila Matchmaker).
 - ⊗ Free market or controlled by the government?;
 - ⊗ CRT is certification based; however, similar to the point that \$\$ is the underlying component.
- ⊗ Environmental Score / Classification.
 - ⊗ Higher tariffs for tiered production or those using additives?;



- ⊗ Alternatively, tax breaks for those companies with traditional production / no additives.

- ⊗ GI (Geographical Indications).

- ⊗ Is there an opportunity to protect raw materials (i.e., sotol) since there isn't a specific geographic location?;

- ⊗ Will need to:

- ⊗ Define the standards, what does this look like?

- ⊗ Define requirements, what should be included?

- ⊗ The US doesn't have GIs like other places in the world. For example, Napa Valley has AVA;

- ⊗ USPTO (United States Patent and Trademark Office):
Trademark productions (i.e. Texas Sotol).

- ⊗ Craft Distillers Association



Agave plant x yeast x bacteria interactions

Block 1: Century Room

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Discussion and Recommendations:

We discussed the importance of understanding the role of microbes and yeasts in mezcal, tequila and pulque processes.

Learning the flavor profiles of microbes.

There are microbes in bagasse, a circular product.

Introduction of microbes comes from many diverse directions, including shredders and pounding.

Freezing in weather is a problem that can kill agaves, especially in the flatlands, where cold air collects and a tendency for flooding, better to plant agaves on hillsides.

Great deal of diversity in agaves where there are over 200 species, whereas there are only 3 rice species and one barley species.

There are layers of interaction ecology between plant and soil and plant and pollinator.



Probiotics of agaves are in fermented beverages and are healthy, however mezcal baking may kill certain microbes. Inulins of pulque are anti-diabetic.

However agave syrup is just pure sugar and as unhealthy as corn syrup.

In Oaxaca agroforestry includes the intermix of flowers with agave plants. This encourages pollinators.

We suggest / propose making a recipe book for microbes for use by mezcaleros and pulqueros. Document practices for inoculates and different microbes, follow soil and human health.



Agave Biocultural Diversity

Block 1: Plaza, Hotel Congress

Merged session topics:

Agaves - Eco restoration or devastation (Randy Young Villegas)

Agave Agroforestry - opportunities and challenges (Erin Riordan)

Conservation of wild species (Raul Puente)

Farmer's prosperity and health (soil → plant → human) (Yadi Wang)

Explore agave human relationship: Past and present (current issues:
climate, soil health, economic well being) (Doug Richardson)

Biodiversity, what happened? (Diana Pinzón)

Fair labor practices and training needs (skilled labor) (Jesús García)

Sustainable community development meets farmers, gatherers,
“productores pequeños” in rural Sonora (Zach Palma)

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Steve Plath

Need:

Agave diversity/plant materials in agriculture. Conserve agave through use.

Opportunity:

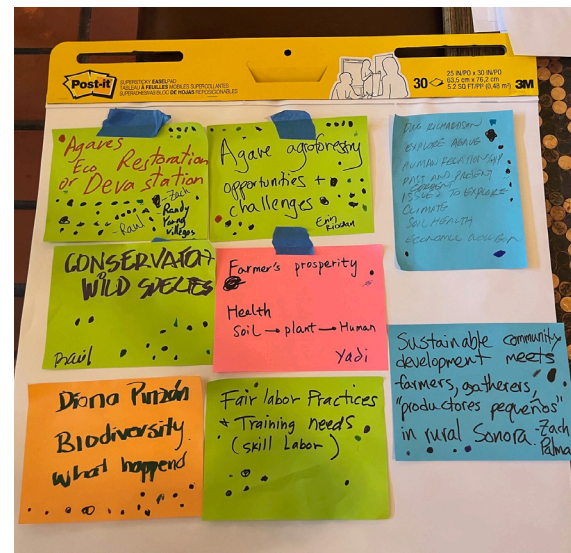
Agave restoration / regenerative agriculture to reverse desertification and cope with climate change. Agave to provide training and community engagement.

Questions/Ideas/Recommendations:

- ⊗ What data do we have related to what people want in using and working with agaves?
 - ⊗ There is a need to talk to everyone, have community meetings, what do they want out of using agaves?;
 - ⊗ What is the local knowledge? Where species grow, for example, where some are left and why;
 - ⊗ Gather the local knowledge about the problem; Goals and procedures, community consensus;
 - ⊗ Getting the funding; active programs might be funded first;
 - ⊗ What we need to know is what the people know;
 - ⊗ This engagement can help researchers—surveys as a start, to incorporate local knowledge.

- ⊗ Increase inclusivity and diversity in these spaces/conversations.

- ⊗ Creating ecosystems that work with social resilience with restoration projects.





- ✿ Distribution of data;
- ✿ Relying on local knowledge, water issues, economic impacts;
- ✿ We need better sharing platforms with local growers.

Question for the group; we're all deep in our space, have our own perspective; what, as a group, do we think is the best way to engender change? We have solutions—is it transmission of information, consumer activism? How are we framing this?

- ✿ There is an opportunity for agave restoration/agriculture to reverse/prevent desertification and help cope with climate change. However, we need to ensure that adequate genetic diversity and local adaptation of plant materials are used in these types of projects. This means matching appropriate plant materials to different climate regimes and following a regenerative model for growing agave, not monocultures, and expanding scope of plant use to whole plant and beyond alcohol (food, fiber, etc.). Under this model, agriculture/use could serve as an avenue for agave conservation.
 - ✿ Tony Burgess's lecture on the need for a controlled/human supported migration of agave species. Audio available here, 1 May 2019, <https://drive.google.com/file/d/1IAKxYKW29RR0pPupazzt-G8ZqFzjihKV/view>;
 - ✿ Need agave diversity to solve planet's problems;
 - ✿ Need to use agaves to conserve them;
 - ✿ Need for regenerative practices and holistic approach;
 - ✿ Need to bulk up plant materials for agave restoration and agriculture;
 - ✿ Examples:
 - ✿ Tierra del Jaguar agave/agroforestry as a means for land restoration; Sophia Trapp in San Miguel de Allende/Guanajuato.
 - ✿ Bat Conservation International (BCI) work in US and MX, ecosystem approach incorporating agaves in a holistic approach.
 - ✿ Agave plant materials by native plant nurseries/restoration programs like BCI, Borderlands Restoration Network, Steve Plath.

- ⊗ Resilient Ecosystem goal - must address climate change impact.
 - ⊗ Need distributional data and understanding of local adaptations. Need to combine local knowledge and understanding of climate adaptation for agave restoration and production.

- ⊗ Social Impact—how can we use agave as a community builder, a tool to provide community engagement activities?
 - ⊗ Framing what we want to talk about:
 - ⊗ conversation is about ecosystem health;
 - ⊗ macro vs. micro;
 - ⊗ biocultural heritage;
 - ⊗ carbon sequestration;
 - ⊗ urban and social
 - ⊗ From macro perspective you can foster this approach on a local level;
 - ⊗ How could we do this to achieve ecosystem health that will spill over into fauna, flora, agroforestry, jobs, economy, community?;
 - ⊗ Benefits to neighbors when doing regenerative ag;
 - ⊗ What are community goals (for restoration)? Important to address needs and understand local knowledge about the problem. Community engagement is key to success. Surveys of local botanical knowledge to inform research, conservation, production?;
 - ⊗ What motivates people? Cultural attachment to agave and the economic opportunity;
 - ⊗ This is aspirational – how do we overcome real world issues to achieve these goals?

- ⊗ Major challenge: DEMAND. Not just large-scale monoculture production and its environmental impacts, but also demand for exotic agaves, especially rare species. Communities in MX harvest everything because of the demand, so it's easy at the small level, but this is a much bigger problem including bio-piracy and things occurring in California.
 - ⊗ Taking the plant—what happens to ethnobiological/ biocultural relationships; what are the consequences?;
 - ⊗ Communities in Oaxaca need resources; “killing” a part of the culture; erosion and devastation of biocultural diversity is triggering societal free fall; what is our responsibility?





- ⊗ “I am from Sonora, I see these levels; I think the strategy, stepping back, creating a foundation based on community needs”; a problem transferring the knowledge to small producers; if we want to create impact in restoration and conservation we need to survey the knowledge.
 - ⊗ Who’s missing from this conversation? Sonorans.

- ⊗ Arizona Agave Alliance idea—cultural heritage and economics; market influences; agriculture and conservation; need to look to the past today to look for the future; Hohokam had it figured out a thousand years ago; what connects all of this is the market; thinking about the market to build a sustainable commodity;
 - ⊗ How do we promote agave production using the market; we’ve prioritized grazing, how do we prioritize agave?

- ⊗ Learning resilience
 - ⊗ Lessons of the past—inability to be resilient to climate change; how do we be better stewards of the land?;
 - ⊗ Water use efficiency. Agave likes low water. Less water/drought can provide a superior product and flavor;
 - ⊗ Farmland preservation/land stewardship as part of the conversation. Can arable land be kept in production with less water by shifting to growing agave? Convert old/fallowed lands?

- ⊗ Market development
 - ⊗ Informed consumer and international market;
 - ⊗ Agave distillate consumer wants organic, zero-carbon—the consumer will choose that; this is where the market trends are going;
 - ⊗ Less water/drought provides superior product/flavor. Market development/ branding for low-water/drought grown agave?
 - ⊗ Agaves helping the cows; we’ve been using fermented agave to substitute feed, especially in times of drought; trying to build bridges between ranches;
 - ⊗ Intercropping la milpa with pecan trees;
 - ⊗ Needs to be realistic to community needs; you need to feed yourself first before you think about restoration;
 - ⊗ We need consumers to be part of the solution – use consumers as economic divers to do conservation and regenerative practices.

- ⊗ What lessons can the greater SW learn while creating a market for agave?
 - ⊗ Lessons from Mexico;
 - ⊗ What is the role of public lands?
 - ⊗ Prioritize agave vs. grazing?

- ⊗ A singular market focus on distillates is fueling extractive/exploitive practices that are driving both agaves and cultures to devastation. Don't romanticize agave!
 - ⊗ I'm from central MX; need to understand complexity; in central MX agave doesn't only equal mezcal, has many uses; every time someone says let's focus on the market, it's like no, that's what's driving everything into the ground; distillates are romantic; most of everything we drink is not sustainable; we need to be more realistic; what we are talking about—niche—are small steps; I was home in January and there are no wild agaves because everyone wants to get into the market; what about sotol?; the scale of restoration is so little; first we need to remove that block;
 - ⊗ Agave is diversity, culture, fiber, food.
 - ⊗ Need regulations; education; real storytelling.

- ⊗ Stewardship and agave
 - ⊗ Conventional practices and crops are degrading soil health and human health;
 - ⊗ A shift in focus of metrics/qualities of products is needed. Not just yield/quantity;
 - ⊗ Need to consider ecosystem function -> opportunity for agroforestry;
 - ⊗ Planting agave thinking about ecosystem function;
 - ⊗ What ecological services can teach; how can we translate soil health into human health?;
 - ⊗ Integrity, stewardship, thinking of future generations;
 - ⊗ Not just a single species focus, need a diverse system;
 - ⊗ But need an economically viable market with a fair price to drive farmer transitions;
 - ⊗ Need a balanced approach, not just market forces.





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Next steps:

- ⊗ Inclusion—who's in the conversation? Surveys are not enough. We work in these communities in rural towns—where's their place at the table? What are their goals? Agave as a distillate or an economic opportunity.
 - ⊗ Addressing inequality; we are privileged here; who is missing here? Folks in rural communities can't be here.

- ⊗ People are a key part of ecosystem, restoration, and conservation work.
 - ⊗ Remote, hands off restoration versus a more socially conscious approach;
 - ⊗ As one said, feeding one's family comes first—thinking of conservation with the social and economic element; can't keep the people out.
 - ⊗ Economics need to be there; needs to be viable and profitable;
 - ⊗ Conservation is last priority if people are in poverty;
 - ⊗ The money producers earn is nothing while here [in the US] it is a lucrative industry.

- ⊗ Need to see the system/complexity.
 - ⊗ Agave as an ecological element, not just agave as an agricultural product.
 - ⊗ Need to understand the plant in its wild habitat first to inform agave agriculture;
 - ⊗ A need to consider the system and not just the romantic charismatic relationship;
 - ⊗ Agave has been harvested/cultivated for over 10,000 years and in the last 15 years, we've lost so much.

- ⊗ Bar owner—what strategies do you have as a bar owner or bottle shop owner to support best practices, support communities?
 - ⊗ How to encourage folks to pay more and provide more to producers?;
 - ⊗ A little curation and we can make sure more money goes into those communities; amplifying other voices;
 - ⊗ easy to romanticize;
 - ⊗ we're [bar owners] are always looking for more strategies and want to learn from you.

- ⊗ Urban farmers—when I heard some folks from MX speaking about folks in rural communities—why aren't they producing right now?
 - ⊗ Goes back to identity; being in spaces where I don't see myself identified—only Indigenous, brown woman in the industry (farming);
 - ⊗ Why aren't Indigenous, rural communities excited in agave production? Cultural resistance to exploitation and exploitation of culture;
 - ⊗ I am proud to come to these events and share our stories; making this exciting again, showing the youth, others that look like us, they deserve to be at the table;
 - ⊗ When I go to Oaxaca, I see resistance; they run out big corporations because it's in our culture; compañero from Oaxaca told me folks don't consume their own products;
 - ⊗ This is a cultural crisis and a loss of identity.

- ⊗ My personal perspective as a “homeboy from the hood” – I was introduced to this as a younger person. I've noticed that we have the puzzle pieces, we just don't have the proper infrastructure and we get there by educating.



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- ✿ Putting our dollar where our values lie;
 - ✿ Understanding economics, having agency;
 - ✿ How do we offer these opportunities; cultural identity;
 - ✿ Baby steps get us to where we are right now;
 - ✿ Visit ppl in southern MX doing a whole lot more with a lot less;
 - ✿ Learning from the small pocket of folks doing this work here in Tucson;
 - ✿ How to amplify their voices; how to scale up these projects?
- ✿ Thinking about urban spaces, too. What can we do within urban environments?
 - ✿ Mission Garden—solutions—we set the base of what the problems are, the value of agave, etc;
 - ✿ Throwing in solutions from urban agave to marketing, changing the palette; we all have the responsibility—what can we do in our realms?
 - ✿ Urban agave—where are these agaves? Southside? No, they’re north, Foothills; as a landscape feature;
 - ✿ How can we shift and start using those landscapes as agro-forestry, agro-system?
 - ✿ We’ve been doing this for 8 years, harvesting urban agaves and roasting them
 - ✿ Creating a film about this.
 - ✿ We do have something to learn from the past, recent and further past.
 - ✿ The Hohokam grew lots of agave and they knew where to grow it. Their canal systems are the largest canals north of Peru;
 - ✿ grew with corn; alluvial/flood water farming;
 - ✿ grew agave in addition, extended production where other crops could not grow;
 - ✿ grew it totally with runoff and rock features to slow and disperse the flow of water;
 - ✿ not in competition with other crops that need moisture;
 - ✿ and they had markets; specialization in fiber crafts;
 - ✿ agave was important in social occasions—offering food and drink—and still happens in Northwest MX;
 - ✿ Etsy producing products; there’s a big appetite for agave products, people are paying a premium for them;

- ⊗ Agave cultivars were a multi-use plant;
 - ⊗ There was a larger number of edible agaves and domesticates. People were growing far more than we know today;
 - ⊗ You can't have conservation without culture and biodiversity parts; important to listen/involve Indigenous voices; involve them more; hopefully next year.

- ⊗ Education is critical, but industry may need to step up, or change, as well. Need responsible industry to support 'good practices' where \$ goes back into communities and agaves are grown in a balanced way where local ecosystems and communities can benefit.

- ⊗ Importance for native seeds and ecological restoration.
 - ⊗ There is a huge crisis with agave and a lot of native plants;
 - ⊗ Borderlands Restoration Network program, collects seed, grow it, plant it in the same place it was collected;
 - ⊗ Everyone can do this in their backyard;
 - ⊗ Local orgs popping up doing this kind of work; Valeria and Diana's project—saving agave seeds of species that are being decimated;
 - ⊗ Super exciting to see work starting with seed;

- ⊗ Importance of including the regulators and policy makers in this conversation.

- ⊗ An Aridamerican model for agriculture in a hotter, water scarce world, 2020 paper by Nabhan, Riordan et al. (<https://nph.onlinelibrary.wiley.com/doi/full/10.1002/ppp3.10129>)
 - ⊗ Importance of desert-adapted perennial polycultures;
 - ⊗ We're surrounded by desert plants that are healthy for us, and we're not using it;
 - ⊗ One thing we can do—make sure we vote and connect to policy;
 - ⊗ As scientists, we need to make sure agencies/stewards of our land open up lands, make the process easier.





Responsibility lies in each of us to engage and create change:

- ⊗ Infrastructure, informed by science;
- ⊗ Education and exposure;
- ⊗ Amplify grass roots and individual efforts to lead to a scale up;
- ⊗ Ensure benefits come back to communities;
- ⊗ Develop plant materials for restoration and to replenish wild populations;
- ⊗ Incorporate missing voices
 - ⊗ Native voices
 - ⊗ Regulators
 - ⊗ Policy makers
 - ⊗ Producers
- ⊗ Undertake action within urban environments;
- ⊗ Create urban and wildland agroforestry examples;
- ⊗ Show agave on the dinner plate;
- ⊗ Forster personal relationships with plants.



Social impact of “agave hype” on people

Block 2: Club Congress

Conveners:

Dora Martinez, doram21@gmail.com

Tito Romero, tucsontito20@gmail.com

Emily Rockey, notes

Participants:

Sarah Foote

Erin Riordan

Dora Martinez

Tito Romero

Sophia Trapp

Lorenzo Dominguez

Shad Kvetko

Brianna Mann

Kristen Lear

Marsella Macias

Emily Rockey

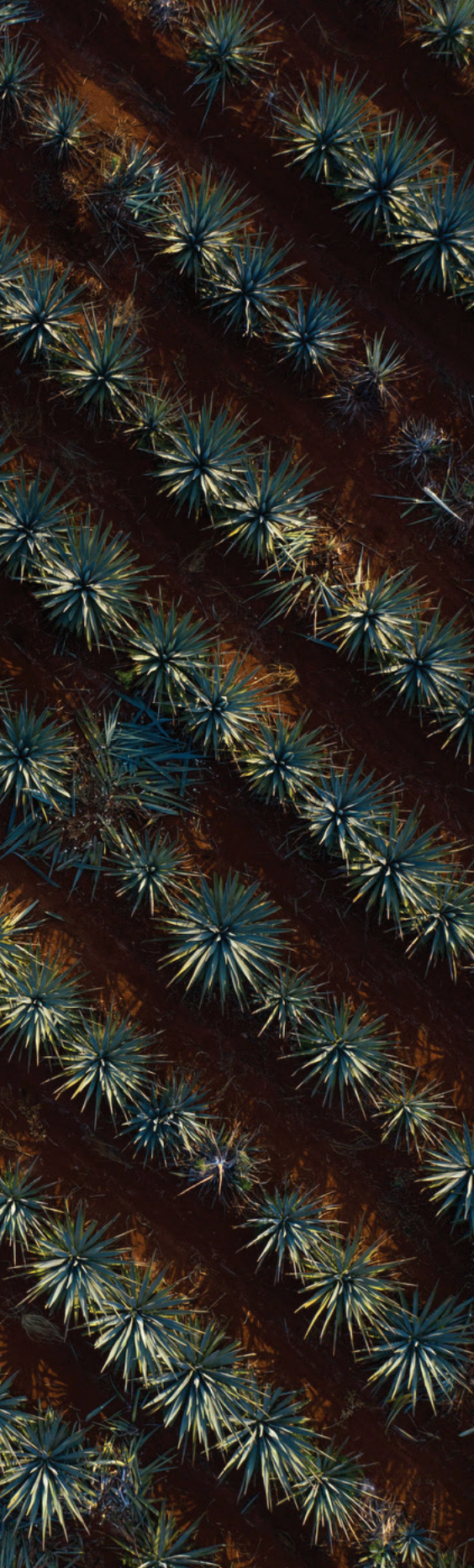
Zach Palma

Discussion and Recommendations:

Main topic: Social impact of “agave hype” on people and what are the roles and responsibilities of people working in urban settings:

- ⊗ Roll and contribution of younger generation/collaboration, multigenerational.
- ⊗ Gaps in knowledge/loss of knowledge due to migration, etc. disconnection from the land.
- ⊗ Fundamental “erasure of history”.
- ⊗ Social justice issues. Period. Mobilization.
- ⊗ Co-empowerment! Growing food as a collective.
- ⊗ The challenges of working people and daily priorities.



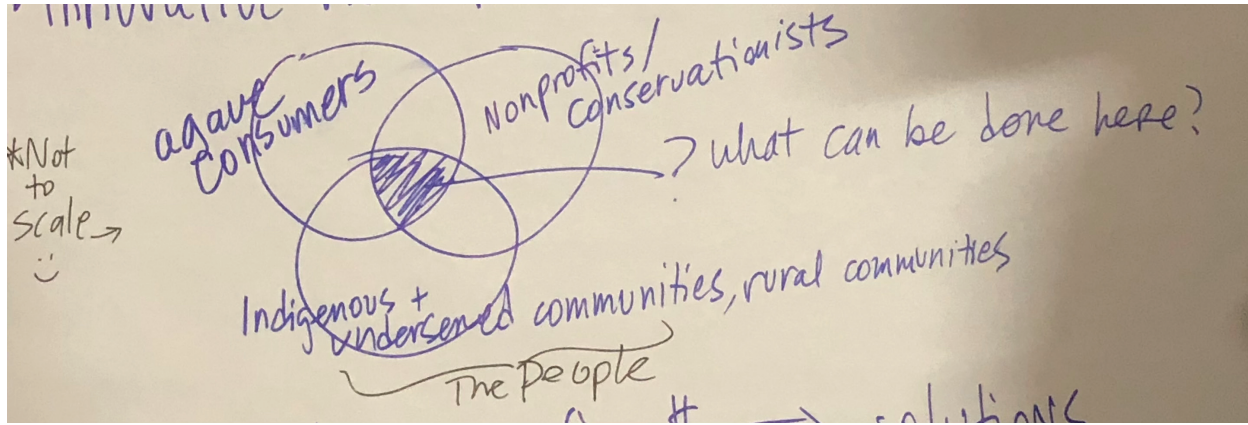


- ⊗ Finding common ground and recognizing past and present state of community and cultures.
- ⊗ Ancestral and regenerative farming.
- ⊗ Reconnect with the true spirit of agave through food/true culture.
- ⊗ Take the layer of romanticism off. What is the industry's responsibility?
- ⊗ Finding creative solutions, patience, dignity, respect.
- ⊗ How can nonprofits/NGOs encourage industry responsibility/participation?
- ⊗ Have more experiences in nature.
- ⊗ Design programs that outreach to the community and that are accessible.
- ⊗ Greenwashing...
- ⊗ Self governance "labeling " (certifications like naturally grown etc..)
- ⊗ Innovative ideas to share traditional foods.
- ⊗ Redistribution of money = solutions.
- ⊗ next generation! Make it accessible, create learning spaces.

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Our question:

What can be done in the middle of the diagram?



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Agave Domesticates

Block 2: Plaza, Hotel Congress

Conveners:

Ian Beger, ibeger@castlehotsprings.com

Castle Hot Springs Farm Director, 3 acres of cultivated agave. Ian is curious about cultivating agave domesticate varieties for food, beverage and fiber on a larger scale.

Suzy Fish, sfish@arizona.edu

Suzy has been studying and growing agave domesticates for many years. She with her husband Paul established a 35 year old *Agave murpheyi* study population.

Wendy Hodgson, whodgson@dbg.org

Wendy encountered *Agave murpheyi* in the 1970s and has worked with agave domesticates since.

Participants:

Diego Cantú	Noah Silber-Coats
Raul Puente	Chris Sauer
Jesús García	Paul Fish
Dena Cowan	Suzy Fish
Héctor Ortíz	Natasha Riccio
Andrew Salywon	César Ojeda
Ian Beger	Greg Starr
Wendy Hodgson	Michiel Pillet
Brandon Obergardt	Steve Plath
George Coppack	Eduardo Salmerón
Doug Richardson	Brandy Salmerón
Janos Wilder	Sandro Canovas



Discussion and Recommendations:

Domesticates are found at many archaeological sites around Arizona. There are at least six species identified as Arizona domesticates.

There are also at least 2 to 3 more native species described as cultivated but not domesticated.

Question - is *Agave americana* classified as domesticate? Very prominent along with *Agave murpheyi* why don't we use those varieties for agave spirits?

This species deserves serious further consideration even though it has not yet been confirmed as a native domesticate in our inclusive region.

Ian - I believe that we should bump up the numbers of all agave domesticates as they are well adapted and could be found to be useful in the drought stricken southwest agriculturally.

Wendy - problem with acquiring them. We need to get the numbers up. Some are at the point of potential extinction.

Tissue culture could help. New regulations create more problems making it harder to get permits to collect seed or bulbils if we want to give them to others to grow out.

Suzy -Murpheyi can and has survived with no additional water using Indigenous, prehispanic planting methods to capture surface runoff and direct it to stone constructions that enhanced moisture for agave plantings, *A. americana* ultimately did not survive to maturity in these



experiments but has done well in experiments for row crops where very low incidental water was available in irrigated fields (Robert McDaniel, UA Plant Sciences, Retired).

Wendy - We are working at Lake Pleasant with the Bureau of Reclamation, which required the Tribes to weigh in on if and how we should protect *A. murpheyi*.

We do not know for sure what domesticates were used for what purposes, we do know that all the domesticates are sweet, with *A. phillipsiana* as very sweet.

Q. Are the domesticate varieties of agave intellectual property?

Wendy - when making money off of them that should be considered legally, morally and ethically.

Input: Human beings are experts at finding the convenience factor, there is a reason why these varieties were domesticated.

Jesús García - Economic value of *Agave americana*, pulque variety in Mexico and many California growers are doing ensembles with it. It's everywhere here.

Suzy - A similar complex of archaeological stone tools for processing agave is found at sites throughout Mexico, California, and southern Arizona. A bimodal distribution of knife widths for scraping leaves to extract fibers in Arizona sites suggests both thinner and wider leaves of domesticates from fields, although the range of potential domesticates is uncertain.

These domesticates are not from Central Mexico as genetics indicate they may be more regional.

Agave roasting pits are found at archaeological sites with domesticate species often present, notably *A. murpheyi* in the Tucson bajada fields

Q. Is a way to honor the domesticates and Indigenous Peoples that developed them is to get them out and to growers in an agricultural setting to help them grow?

Wendy - There is a desire to work with growers but first we must get the numbers up under controlled access. We cannot let people just

go out and collect material without guidance and oversight, as well as potentially impacting the archaeological/biocultural sites. Bringing in the Native peoples on this conversation would be beneficial. We need them to be present for this.

Potential for regenerating the landscape with domesticated species.

Difficult to acquire permits for domesticated varieties because they are considered “domesticated” and not endangered because of that.

These taxa are not able to receive any protection under the ESA, Archaeological Resource Protection Act, and cannot be assessed for IUCN Red List assessment.

Is more challenging to get permits on FS managed land if we want to loan material to other organizations, groups to grow for the purpose of increasing numbers.

Needs to be a dialogue with appropriate land management staff to make the permitting process more appropriate for the needs of those who want to increase the number of plants for conservation purposes.

Ethical obligations - not protected for modern tribes that find them culturally significant to their population.

In summary:

Agave domesticated species are considered domesticated and therefore not protected by environmental conservation laws or frameworks.

There is a need and desire to increase the population of agave domesticated species. There is potential for cultivating them agriculturally, however, there is a need to more actively involve Indigenous peoples in the conversations and process. Additionally, any cultivation of the species must be done with oversight by the experts on the species as well as federal agencies responsible for managing the plants and habitat.

Regional agave domesticates in the past were undoubtedly cultivated for a variety of food, fiber, and alcohol production qualities. Those that have survived as current relicts demonstrate fitness here in the absence of active cultivation. Additional former domesticates with more distant origins may not have similarly survived to the present without continuing human intervention. Promising candidates from neighboring arid areas should not necessarily be excluded from our search for economically viable conservation and environmental rehabilitation purposes.





Storytelling as a vessel for Agave education

Block 2: Century Room

Conveners:

Michael Kaufmann, desertspotlightlive@gmail.com

Brett Baker, brett.baker19@gmail.com

Sara Lowden, note taker

Participants:

Randy Young Villegas

Sheila Scoville

Michael Hurley

Kent Adams

Sara Lowden

Mike Groener

Laura Papa

Kristi Martens

Alejandra Platt

Liz Furlong

Jhonny Ramos

Chris Simmons

Kristina Simmons

Maegan Lopez

Michael Kaufmann

Brett Baker

Discussion and Recommendations:

- ⊗ Three parts of a story:
 - ⊗ What stories have we experienced that we want to share? (Message)
 - ⊗ Who do we think needs to hear those stories? (Audience)
 - ⊗ How can the stories be told so that those people can receive and understand them? (Medium)

- ⊗ Ability to move between worlds; artist, educator, scientist; how do we connect across communities? Storytelling.
 - ⊗ Uncomplicating the narrative; getting folks excited for sharing the knowledge;
 - ⊗ What kinds of stories exist in this space?;
 - ⊗ What kind of narrative vessel it can take?;
 - ⊗ Storytelling mechanisms; mediums like murals.

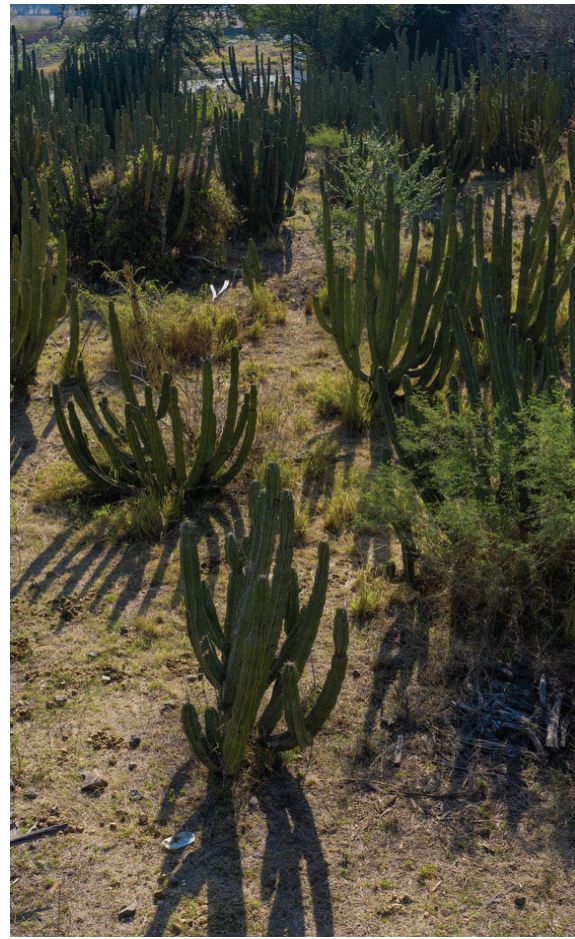
- ⊗ There's no money in the environment because of current cultural values (sports, blockbuster cinema, overly domesticated recreation, etc).
 - ⊗ How can we share knowledge with people who have no interest in learning?;
 - ⊗ How can we tell stories that sway interests and values?

- ⊗ Shouldn't we be able to feed ourselves, not with money, but with the natural earth instead?

- ⊗ How can we share stories that inspire care and stewardship of our ecosystem and the agave population with people who have no prior interest in ecology or conservation?
 - ⊗ Storytelling to enhance marketing;
 - ⊗ Ex: Tierra del Jaguar tequila.
 - ⊗ Back to the talk about microbes—how to tell the science story?;
 - ⊗ Ex: what's a good agave?;
 - ⊗ First thing, breaking myths;
 - ⊗ Converting science into a way of understanding;
 - ⊗ Create characters;
 - ⊗ cool agaves;
 - ⊗ fungi and bacteria;
 - ⊗ kids can tell their parents; peer-to-peer.

- ⊗ What's the problem with communication? How to communicate science to the public? What [mezcal] producers are telling me and turning that into a story.
 - ⊗ Importance of time—time to gather stories; building rapport.

- ⊗ How many stories can be told, and how?
 - ⊗ Ex: Muralist Ignacio creates a mural for a building that shows the agave harvesting process from an individual perspective. The presentation of the process is illustrated chronologically, but flows like a river stream;
 - ⊗ Aesthetic lenses, etc, but who is the audience and what's the objective of the story?;
 - ⊗ Different vocalizations; what's our tone for these stories? What focus are you bringing to the table?;
 - ⊗ Importance of refining edits, pace—authentically highlighting what the interviewee is saying;



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- ⊗ Addressing the storyteller's biases; importance of reflexivity; editing and interpreting; whose values are proposing?;
 - ⊗ In cases where you're talking about life stories—what are some methods you can use to be succinct and nuanced?;
 - ⊗ Meeting people where they are;
 - ⊗ The context of language, iconography, matching the region;
 - ⊗ Globalization is important to increase inclusivity; accessibility;
 - ⊗ Globalization—with respect to inclusivity—access to stories and info but some are at a loss to get their stories out;
 - ⊗ To bring more people in, you have to take into account regional and hyper differences;
 - ⊗ Listening to others stories;
 - ⊗ Collaboration—what stories do you want to tell? How do you want to tell?
 - ⊗ Bringing the finished product back to community;
 - ⊗ Being aware of colonial ways of thinking;
 - ⊗ Knowledge captured in language; Indigenous languages going extinct; like Nahuatl, so many terms for agave, no English equivalent; like maiz, as well; Linguistics as cultural DNA.
-
- ⊗ How can we localize our creativity to generate prosperity?
 - ⊗ Our audience can be our neighbors; a general audience; is the goal to bring the audience into the fold?;
 - ⊗ How can we both learn to work with money, and work without it?
-
- ⊗ Romanticism – going to those places that are so far away...one mechanism to lure or bring people into that place; the voyeurism; exploitation
 - ⊗ How to avoid?
-
- ⊗ How can we hold space for the native people of this land to share their stories and support them without influencing what they say?
-
- ⊗ I thought storytelling was different. You're all European. I'm from here; Being Indigenous doesn't mean I didn't learn everything I need to survive and more. I grew up in the TO Nation. We're still here. And we are empowered; your answers are here in front of you; be aware of what your limitations are; In our [T.O.] culture. We're only allowed to tell stories at a certain time of year, not

during summer, only winter. It is the only time we're not planting; industrious, working; then wintertime storytelling and games, inside activities; Also, agave and wild foods, when to harvest--We have our own traditional calendar, twelve seasons of the desert cycle, tells us what to do next, how to prepare (ex cholla bud season); storytelling makes it more impactful; waiting for the good stories, creation story; you remember those.

⊗ How do you recognize yourself? How do you identify yourself? Knowing what you can actually do.

⊗ Culture, tradition, change: Clay distillation is newer than copper but the law made it sound older; have to be careful putting people into a trap; rewrites history.





Wrap Up

Plaza, Hotel Congress

Convener:

Ben Wilder, wilder.benjamin@gmail.com

Sara Lowden (Note taker)

Discussion and Recommendations:

Different ideas shared by participants:

- ⊗ Have contact info / Google Drive to keep conversation going.
 - ⊗ Everyone is an editor for the session proceedings, could this be a living document?
- ⊗ Takeaways. Each individual could perhaps write a short statement of their experience and personal perspectives of the Summit and next steps.
- ⊗ A desire to expand to additional people and groups, especially tribal nations.
- ⊗ Equity. Do not necessarily need solutions now, start with dialogue and new perspectives.
- ⊗ Virtual follow up of breakout sessions (e.g., video meetings to continue conversations) to build on these initial dialogues.
- ⊗ Have a greater diversity of events at the Agave Heritage Festival (AHF), more accessible educational events. Not everyone has the resources to attend.
- ⊗ Prioritize the minimization of duplicating work. Collaborating leads to better and more efficient outcomes.
- ⊗ Importance of having the Summit at the frontend of the AHF to jumpstart connections and conversations that can continue to ripple through the whole festival and beyond.
- ⊗ Agave Alliance idea: a space for consensus in agave's uncertain future and an attempt to establish boundaries about best practices?

- ⊗ What are the regional problems; political economy of agave issues.
 - ⊗ Agave Alliance as an onion, many layers speaking for the agave.
 - ⊗ Ex. California Agave Council. Sharing experiences, challenges and successes. People's wellbeing and environmental wellbeing.
- ⊗ Idea to make a Whatsapp/FB/Social Media space to continue dialogue.
- ⊗ Inviting other voices – what does this mean? How to best do this to increase the diversity of perspectives and voices?
 - ⊗ Bi-national (challenges of crossing border, especially from Mexico to the U.S.);
 - ⊗ Feeling heard, respected, ability to travel, accommodations;
 - ⊗ Connects to the session “Social impact of “agave hype” on people” and the ven diagram image. Equity, how big/small are these circles?;
 - ⊗ Doing more events in Mexico;
 - ⊗ Zoom/virtual platform to include more people;
 - ⊗ Grant/scholarship program;
 - ⊗ Involve graduate students from Mexico.
- ⊗ Build trust, repairing relationships. How do we engage in conflict and hold people and ourselves accountable?
 - ⊗ Youth! Where are they? How are we engaging young people?
 - ⊗ Next year – uplift others – spread the word and bring someone with you. Extend the connections.
 - ⊗ How do we involve folks with a rich connection to agave (distillates and other) with a complicated relationship with alcohol?
 - ⊗ Medicine: a rich cultural tradition of agave as medicine in Guatemala for example.
 - ⊗ Could focus more on the other important uses of agave;
 - ⊗ Discover the potential of agave as medicine;
 - ⊗ Moving forward, make sure to honor the cultural heritage of agave.



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- ⌘ Can help with diabetes and other ailments/illness, health and wellbeing in our modern world.
- ⌘ Provide producers their own space and create a space for producers and consumers together.
- ⌘ Scholarship fund for tribal nations.
- ⌘ Look into hosting similar gatherings that are not a bar. Less focus on agave as a distillate.
- ⌘ Less cerebral, more action (e.g., planting).
 - ⌘ More relational action with the plant (touch, smell, etc.);
 - ⌘ Popup agroforestry projects with new partners.
- ⌘ Engage landowners, a combo of private and public lands to take action in. In the U.S. and Mexico.
- ⌘ Agave as biofuel / global connections beyond US/MX (other arid landscapes).
- ⌘ Use different social media connections to advertise agave events.
- ⌘ Have a tasting party with your friends and networks – spread your knowledge.
- ⌘ Everyone please contribute ideas to the best platform for connecting.

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A photograph of Howard Scott Gentry, a man with a beard and curly hair, wearing a blue and white checkered shirt, standing in a field of agave plants. The background is a dense field of agave plants under bright sunlight.

Howard Scott Gentry

Career Award

Gary Paul Nabhan

We would like to take this time, upon his formal retirement from the University of Arizona, to pause and recognize the transformational impact Gary Nabhan has in so many areas – agave and beyond.

Gary is a visionary who's sensitivities and keen insights bridge ways of perceiving and communicating our world. This truly unique capacity has led to remarkable outcomes.

He has created numerous organizations (Native Seed Search, Center for Regional Food Studies) and been at the ground floor of spearheading many complex efforts (UNESCO City of Gastronomy, Edible Baja) that shape our community.

He has and continues to lead the charge in crucial topics that affect all of us, such as a global model for an arid adapted food system rooted in place and a balanced practice of agave production that builds rather than consumes.



Award presented to Gary Nabhan, 27 April 2023. Mark Rossi bronze sculpture of agave flowers visited by a lesser long-nosed bat.

By:
Benjamin T. Wilder
Director, Next Generation
Sonoran Desert Researchers

Todd Hanley
Founder and Director, Agave
Heritage Festival

Jeff Bannister,
Director, Southwest Center,
University of Arizona

He is a champion and friend of Indigenous Peoples throughout the greater southwest. His decades-long collaborations especially with the Tohono O’odham and the Comcaac have merged ways of knowing toward their empowerment that continues through committed friendships.

He has significantly added to our understanding of the desert via over hundreds of papers and reports and field efforts and have revealed secrets of desert plant domestication, the alchemy of the smell of rain in the desert, and the role of desert peoples over millennia in shaping the landscape we see today.

And perhaps our favorite of all, he captures our sense of wonder and joy in being citizens of the desert. His over two dozen books and countless other writings communicate the threads of connection, nuances of beauty, and the human imprints that make the desert tick.

His words inspire us to look closer and be out there – taking in this awe inspiring part of the world on our own and sensing the staggering complexity represented in a chiltepín pepper or a glass of mezcal.

It is our honor to recognize Gary with this special Howard Scott Gentry Award for all he has made happen and all you have yet to create.



From left to right, Todd Hanley, Jeff Bannister, Gary Nabhan, and Ben Wilder. Photo by Jorge Tapia Íñigo.



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