Research Symposium: Culturally Significant Plants and Climate Change

March 22-24, 2022

By South Central Climate Adaptation Science Center
Hosted by the Chickasaw Nation
4205 Goddard Youth Camp Road
Sulphur, OK 73086

March 21st will be a travel day. Guest speakers will be flying into OKC and Buses will be picking them up and transporting to Artesian Hotel in Sulphur, OK.

SC CASC and CN staff will be on hand to set up and assist with guest speaker travel. Set up for check in table, coffee and snack station, exhibitors will be allowed to set up (times?).

Day 1 (Great Room and Amphitheatre)

8:30-9:00 – Check In, Coffee & Light Breakfast

- Exhibitors will be setting up in Great Room
- B3C will be IT for amphitheater and for photos.

9:00 am – 4:00 pm

1) Exhibitors will be set up in Great Room. An exhibitor is someone who will attend the conference and work at a booth on behalf their organization to provide information about the importance and use of culturally significant plants to the participants. Some will be vending. Please visit the Great Room today and talk with the artisans.
2) Buses will be available to take attendees to the Chickasaw Cultural Center (see Covid policy for masks or other restrictions).
3) In the amphitheater room, there will be artisans giving demos (i.e. a class instruction making something, a stage performance of flute or drum playing, a display of baskets and a talk, ETC.)

Day 1 (amphitheater)

- B3C will be IT and photos
- Asa Samuels will be MC for the day

9:00am- Rock Pipestem- Opening prayer song and drum demo/Story

9:45am Introduce Raffle Items (Tickets or Bids)

10:00am- Chickasaw Nation- Basket Weaving

11:00am- Antonia Belindo- Painting class instruction

12:00pm-1:30pm- Break for Lunch

1:30pm- Margaret- Processing and Using Dogbane to make textiles

2:00pm- Carmen Jones- Salve making

3:00pm- Chickasaw Nation- Fish nets

3:30pm- Close raffle and choose winners

3:45pm- Rock Pipestem- Closing prayer song and drum demo/ Story

Day 2 (amphitheater)

*B3C will be IT and recording the talks.

8:00 am Prayer- (LaDonna Brown, the Chickasaw Nation)

8:15 am – Welcome and Introduction to Keynote (Kara Berst, Undersecretary of Outreach and Services of The Chickasaw Nation Department of Commerce)

8:30 am – Introduction to the Climate Adaptation Science Centers (CASCs) and an Overview of the South Central CASC Tribal Engagement Program (Dr. Mike Langston, Acting USGS Director of the South Central CASC, and April Taylor and Yvette Wiley, Tribal Liaisons)

8:50 am – Data Sovereignty and Ethical Considerations in TEK Research based upon Indigenous Researcher Perspectives (T. Scott Ketchum, Tribal Affiliation: Choctaw, Job/position title: Assistant Professor and Chickasaw Nation Endowed Chair in Native American Studies at East Central University of Oklahoma)

9:05 am – Biocultural Restoration of White Bark Pine on the Flathead Reservation (Michael Durglo, Confederated Salish and Kootenai Tribes)

9:25 am – The Power of Seeds: Climate Change and Indigenous Knowledge in the South Central Region (Peyton Cavnar, South Central Climate Adaptation Science Center/ DGES, University of Oklahoma)

9:45 am – Climate Impacts on Plant and Animal Relatives in the Upper Midwest Ceded Territories (Rob Croll, Policy Analyst/ Climate Change Program Coordinator, Great Lakes Indian Fish and Wildlife Commission)

10:05 am – Dibaginjigaadeg Anishinaabe Ezhitwaad: A Tribal Climate Adaptation Menu (Robin Clark, Postdoctoral Scholar/Research Associate, Michigan Technological University)

10:20 am – Break (Play CN videos of culturally significant plants)

10:40 am – Biocultural Restoration Potential at Citizen Potawatomi Nation (Kaya DeerInWater, Shishibani Bodéwadmi)

11:00 am – The Changing Climate of Indigenous Land Care (Neil Patterson Jr., Tuscarora, Center for Native Peoples and the Environment, State University of New York College of Environmental Science and Forestry)

11:20 am – Managing Brown Ash for Resiliency against Emerald Ash Borer (EAB) and Climate Change (John J. Daigle, citizen of Penobscot and Professor, School of Forest Resources, University of Maine)

11:40 am- 1 pm – Lunch Break (set up and test for livestream for Kalani)

1:00 pm – The Intergenerational Transfer: Knowledge, Place, Responsibility, Relationship. Community Capacity for Regenerative Sustainability. (Rev. M. Kalani Souza, UH NDPTC National Disaster Preparedness Training Center, The Olohana Foundation) (live stream)

1:30 pm— Southern Research Station Climate Products, Tools, and Research for Culturally Significant Plants (Michelle Baumflek, Research Biologist, USDA Forest Service)

1:50 pm – Growing Culturally Significant Plants in Nurseries: Challenges and Opportunities (Jeremy Pinto, Research Plant Physiologist/ Tribal Nursery Specialist, USDA Forest Service)

2:10 pm – Empowering Agriculture through Tribal Sovereignty (Carly Griffith Hotvedt, JD/MPA (Cherokee Nation) Associate Director, Indigenous Food and Agriculture Initiative, University of Arkansas School of Law)

2:30 pm – Break (Play CN videos of culturally significant plants)

2:50 pm – The NEON Observatory: An open data resource for tracking drivers and impacts of climate change on ecological communities (Katie Jones, Batelle, National Ecological Observatory Network (NEON))

3:05 pm – Shifting Seasons: Understanding Plant Response to Climate Change (Alyssa Rosemartin, USA National Phenology Network, University of Arizona)

3:25 pm – Climatic Impacts on Agriculture, Conservation Initiatives, and Assistance (Steven Bond, Intertribal Agriculture Council)

3:45 pm – Tim Oakes- TBD

4:05 pm – Wrap up and Raffle

Day 3 (Upper level- Meeting Rooms)

8:00 am – Check In, Coffee & Light Breakfast

April give brief intro to goals of the day. Research collaboration. What are tribal interests and needs in research? What might we collaborate on? Case studies? Research working groups? Proposal ideas? Explain world café plan.

8:30 am— World Café Sessions

We will spend 20 min at each table and rotate thru the topics.

Introduction

Climate change is one of the most important global environmental problems facing Indian country today. Policy decisions are already being made to adapt to climate change and its impacts, but many of these decisions are being made without the science support that could help shape better outcomes. This is especially true in Indian country. These world café discussions will be to identify research interests, needs, and priorities around culturally significant plants and climate change. The sessions will consist of a series of facilitated discussions around the following topics (below).

Table #1 Time to Restore: Connecting People, Plants and Pollinators (Alyssa Rosemartin)

Description: Pollinator restoration has many challenges, from selecting which species to plant to provide nectar during critical periods, to knowing how these plant species will respond to changes in climate including more variable weather conditions. Better knowledge about flowering and seed timing for critical nectar plants, and the links between this activity and climate, can inform more resilient restoration plantings. We are a team of collaborators from the Bosque Ecosystem Monitoring Program, the Tribal Alliance for Pollinators, the Gulf Coast Phenology Trail, and the USA National Phenology Network, supported by a grant from the South Central Climate Adaptation Science Center. Our project, Time to Restore: Connecting People, Plants, and Pollinators, aims to deliver guidance to those working on pollinator restoration.

Questions:

- What factors do you consider when selecting plants for (pollinator) restoration?
- What are gaps in information related to nectar plants?
- What tools and resources will help you to make informed choices about planting in the face of climate change?

Table #2 Carbon Storage and Soil Health (Lily Pfeifer)

Description: Plants efficiently absorb CO2 from the atmosphere via photosynthesis, and soils have enormous potential to preserve carbon long-term. Our company, Bison Underground, is in the early stages of developing a tool that will bury plant material deeper into agricultural soils. Together with the transition to "no-till" regenerative practices, our goal is to enhance soil carbon sequestration at a rate that will roll back carbon levels in the atmosphere. We are hoping to have a discussion about the types of plants (e.g., fast-growing, balanced C:N ratio) that might be best-suited for carbon storage research like ours.

Questions:

- Would there be opportunities to collaborate on carbon storage research on plants that you are working on restoring or preserving?
- What plant characteristics come to mind when defining plants that are best suited for carbon storage research?
- Have you had success quantifying net carbon accumulation? What are some of the challenges?
- What are some of the limitations that you associate with plant & soil-based carbon solutions?
- What are some best management practices for growing plants that enhance carbon storage?
- What is your experience with plant growth or restoration efforts and carbon credits?

Table #3 Culturally Significant Plants and Climate Change: Perspectives and Concerns (April Taylor)

Description: We will discuss the impacts of climate change on culturally significant plants. We will discuss what the concerns are. As we discuss these impacts and concerns, we will discuss what concerns around research practices are and what needs to be considered. We will discuss what knowledge is needed about culturally significant plants and climate change. What is needed to integrate research results into tribal planning process for protecting, restoring, or adaptation practices?

Questions:

- How do tribes influence research priorities?
- What partnerships of tribes and non-tribal universities are required to develop tribally relevant research strategies?

Table #4 Furthering Partnerships and Research for Culturally Significant Plants and Climate Change (Michelle Baumflek)

Description: In partnership with several Southeastern Tribes, the USDA Forest Service Southern Research Station has been building a research program dedicated to care of culturally significant plants and inclusion of Indigenous knowledge. The Station also has many scientists who are creating tools that contribute to climate change adaptation efforts in forests and grasslands. Some areas of focus include water yield modeling, tree species range models, and predicting forest disease and pest outbreaks. We'd like to learn more about how Forest Service and Tribal efforts around climate change can be collaboratively identified and developed. This world café table will be a space to collectively discuss future areas of research that can respond to Tribal community priorities for culturally significant plants.

Questions:

- What kinds of research products or tools could further your community's climate change adaptation efforts for culturally significant plants?
- What are some strategies you would recommend for collaboratively developing these tools and partnerships?

Table #5 Telling Future Stories with Climate Projections (Adrienne Wootten)

Description: As the climate changes, climate projections can provide a useful tool for adaptation planning and impact assessments. The South Central Climate Adaptation Science Center provides access to climate projections which tells many future stories. Specifically, the projections available from the Climate Projections Evaluation Project (funded under a grant from the South Central Climate Adaptation Science Center) tell stories of the future climate for all our partners to use for climate adaptation planning and impact assessments. The team at the South Central Climate Adaptation Science Center provides these projections, but also helps our partners interpret them and use them for their needs.

Questions:

- What factors should I consider when working with climate projections?
- What information, tools, and resources from the climate projections would help you make informed choices for climate adaptation planning?

Table #6 Lara Souza- Grasslands and Drought Management

Description: Grasslands in the Southern Great Plains (SGP) have experienced climate variability including drought and pluvial years. Seasonal shifts in precipitation, drought vs. pluvial months, have also been recorded in SGP and have strong ecological impacts such as changes in plant abundance (plant dominance) and overall plant biodiversity. Management, such as hay harvest, may help mitigate drought effects on plant biodiversity by allowing both common (dominant) and uncommon (subdominant) plant species to better coexist.

Questions:

- What plant types do you select during drought vs. pluvial periods?
- What gaps are there in understanding grassland management and climate change?
- What are collaborative opportunities for management ecologically and culturally important plant species under climate variability?

Table #7 Climatic Impacts on Agriculture, Conservation Initiatives, and Assistance (Steven Bond)

Description: The Intertribal Agriculture Council are partnering to provide Native producers with technical assistance and resources. As Native producers continue to be impacted by multiple natural disasters and climate change, we know that many have unanswered questions. This session will discuss what are the impacts for Native American farmers and ranchers and what are their priorities.

Questions:

- What are the types of impacts that you are seeing?
- What could these impacts mean for native producers in the long term?
- What information would be needed to plan or adapt these operations?
- What are some of the options/ alternatives that might be considered?

Table #8 River Cane Gathering and Rivercane Restoration Alliance Updates

Description: The Tribal Nations – USDA Forest Service River Cane Gathering and the USACE TNTCX Rivercane Restoration Alliance groups are working together to promote Rivercane Restoration and foster Rivercane Relationships. The River Cane Gathering hosted 3 webinars to promote restoration efforts and connect

people together for future projects. The Rivercane Restoration Alliance hosted a Rivercane Restoration Workshop focused on creating a Traditional Ecological Conceptual Model for Rivercane. There are many opportunities coming up for 2022 that we wish for you to be a part of!

Questions:

- What aspects of river cane is your community interested in?
- Is a Traditional Ecological Conceptual Model for Rivercane something that could benefit you?
- Are you interested in rivercane restoration opportunities?
- What is preventing rivercane restoration in your area (i.e., policy, land use, funding, education, etc..)?

Table #9 Exploring Research and Collaboration Opportunities among Tribal Nations and Indigenous Communities of the Americas

Description: We will discuss how Indigenous communities in the Andes of South America experience challenges and resilience at the intersection of climate change, crop production, and food security. Andean Indigenous communities, like their sister native nations on the north, have domesticated crops that have become world foods, chief among them, potatoes, quinoa, maize. The diversity of these crops are significant for these communities and their cultures, however, a convergence of factors such as climate change, increasing pollution, lack of technical support, and market dysfunctions are eroding community mechanisms of solidarity and resilience exacerbating instead inequalities and injustices.

Questions:

- To what extent do you see that the experience of the Andean communities are similar to those of the Tribal Nations in Oklahoma?
- Are there successful experiences of research collaborations between native Nations and universities that could be shared/replicated with Andean Indigenous communities?
- How can opportunities be created for North-South Native Nations knowledge/tech exchange and user-based research alliances?

12:00 pm – Lunch break

1:30 pm – Debrief/ Share Summaries from World Café Sessions

2:30 pm – Facilitated Discussion – (Brainstorming Research Projects and Other Collaborative Efforts)

3:00 pm – Wrap up/ Group Photo

March 25th will be a travel day. Guest speakers will be flying out of OKC and Buses will be picking them up and transporting to airport.