Northern California Tribal Climate Adaption

Science Integration Leadership Project

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Northern California Tribal Climate Adaption & Science Integration Leadership Project

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2. PUBLIC SUMMARY:

Dry Creek Rancheria Band of Pomo Indians in collaboration with CIEA (California Indian Environmental Alliance) completed a partnership project with four (4) Northern California Tribes; Kashia Band of Pomo Indians, Robinson Rancheria, Amah-Mutsun Land Trust / Amah-Mutsun Tribe, and Blue Lake Rancheria. The project facilitated regional collaboration between Tribes to develop and circulate Tribal climate resiliency plans, toolkit and resource databases. Mainstreaming Tribal resources for regional planning, policy development and build a foundation regarding continued climate resiliency efforts.

Under this project period the participating Tribes and CIEA established the Northern California Tribal Consortium for Climate Resiliency (NCTCCR). The NCTCCR conducted monthly research meetings to develop the above-mentioned resources. Through community engagement, including both large scale conferences to smaller scale Tribal membership meetings the NCTCCR conducted several surveys relating to climate, Tribal policy and mitigation efforts. Results from this research were used evaluate current climate capacity options and what factors needed to be streamlined for easier access; thus, establishing the framework for the Tribal Climate Resiliency Resource Portal.

Finished application of the Tribal Climate Resiliency Resource Portal includes a climate adaptation tool kit, ArcGIS mapping guide for use and trainings, and a California Species Database.

3. PROJECT SUMMARY:

Establishing the Northern California Tribal Consortium for Climate Resiliency (NCTCCR)

Project collaboration between Dry Creek Rancheria Band of Pomo Indians, CIEA (California Indian Environmental Alliance), Kashia band of Pomo Indians, Robinson Rancheria, Amah-Mutsun Land trust / Amah-Mutsun Tribe and Blue Lake Rancheria to facilitate regional collaboration efforts among federally and non-federally recognized Tribes within the Norst Coast, San Francisco Bay Area, Central Coast and Sacramento River hydro-regions was established and forming the Northern California Tribal Consortium for Climate Resiliency (NCTCCR).

Project efforts supported the development of Tribal climate resiliency plans, and regional planning alignment at a watershed and sub-regional level and engage in policy development for watershed and coastlines. Planning discussions, data gap analysis, derive Tribal priorities, identify Tribal resource concerns and priorities for forest, fire, and watershed-level climate resiliency planning (i.e., water, habitat, infrastructure, forest, watershed, and cultural resources).

Information gathering from NCTCCR quarterly meetings where Tribal resource concerns and solutions were identified and aligned, direct engagement and planning communications with pilot Tribes; consultation with subject matter experts; peer-review climate adaptation and resiliency planning tools, climate models and pertinent databases and spatial and temporal datasets. Evaluation from research and conducted surveys shaped the framework to develop Climate Resiliency Plans: document Tribal resource priorities and traditional management objectives for ecological restoration, identify opportunities to integrate Tribal science into western

management methodology. Confirm adaptability to wide range of Tribal Climate Change issues and landscapes. of priorities necessary adoption of the Tribal Climate Resiliency Resource Portal.

Development of Tribal Science Climate Resiliency Framework

Development of Tribal Science Climate Resiliency Framework began with review of existing climate planning tools and methodology. Data analysis of these resources curated the baseline for our framework; revising resource types, data summaries and options for establishing Tribally-specific baseline subsistence for use and application of Traditional Ecologic Knowledge (TEK).

Regional Tribal priorities for climate change and resiliency planning were developed under Tribal staff and participatory research. Discussions regarding Tribal resource concerns, identification of traditional territories and sensitive geographic locations, habitats, sensitive species and water resources were then compiled to create a list

of known priorities. Through additional administered surveys, community meetings and focus groups rounded the priorities into a more concise component of resource list and geospatial sources for the Toolkit.

Integration of this data into participatory research aided in the identification and establishment of Topic Area Focus Groups. Discussion on biotic and abiotic concerns such as species, resources and cultural uses under threat, in addition to actionable solutions on both regional and cross regional areas.

After compilation and review of all survey questions, focus group discussions and partner support. Participating Tribes conducted ethnographic interviews with delegated Tribal Representatives for Community Based Participatory Research. The combination of internal and external support, data analysis, and planning review lead to the final Framework for the project.

Geospatial planning and analysis / community based participatory research for partner Tribes

a) Identify staff, needed training and/or support in completing tasks (What support is needed and at what level of detail?)
b) Identify options for accessing data including an online portal, or each layer by accessing the toolkit. (Which participating Tribal partners need support in importing data?)
c) Compile and download digital data for interest for import into Geographic Information System (GIS) or ArcGIS Online
d) Create basemap layer(s). Offer "Basemap data" section in Toolkit Resources, Mapping Tab in the portal
    a. Review relevant datasets per Tribal resource concerns, land base and import to maps
    b. Conduct planning meeting collectively with delegated Tribal representatives and identify concerns for initial mapping efforts
e) Classify, import, display and interpret data
f) Create Climate Risk Maps — Display draft findings summary per regional Tribal map and individual partner(s)
g) Initiate Tribal Participatory research
h) Gather additional Data (additional adhocs or Tribal partner leads to identify and share data)
i) Revise map content and resubmit to Community, or integrate into Vulnerability Assessment and subsequent Climate Resiliency Plan with community review component

Tribes Pilot the Framework and Develop Climate Resilience Plans

Development and Application of Tribal Climate Resiliency Resource Portal

a) Developed Survey Materials — We added several new questions to the

Community Survey, Staff Survey, Climate Checklist added a Survey Definition List, Reference Sheets - these materials are ready to be used by climate partners to administer Community Participatory Research.

b) Promoted traditional land management, stewardship techniques and TEK The project had the unique position to facilitate nature-based solutions facilitated by tribally-lead coordination efforts, such as the development of resiliency planning and assessment tools that use advanced actionable science and nature-based solutions as part of the regional systems to counter climate impacts, Strategies will promote Tribal management strategies for protection of cultural resources and traditional methods for ecosystem restoration and management.
c) Developed a Climate Adaptation Toolkit - The toolkit itself has been linked to the resource database and is meant to take users through a set of steps that are color coded and tied to the Resource Database. The resource portion contains a number of data portals, research databases, resource guides, interactive maps, Climate Plans for cities, counties and Tribes.

Integrated ArcGIS mapping layers that allow for users to learn and understand registration processes, obtaining licenses and staff training. Additionally, NCTCCR collaborated with the BIA and outside experts to conduct additional training for all the climate partners after review of a survey to identify what level partner staff are at and what is needed. This included scheduling trainings on ArcGIS and related remote sensing, cartography, participatory data and mapping, digitization-lines and polygons. We identified that some individuals are on different levels of expertise when it comes to ArcGIS training. Education and training opportunities will be updated periodically on the portal to offer new staff engagement as well as continued education.

We made big strides on a robust CA Species Database with links to programs and contact information for experts and tribal experts working on species planning that can inform climate interspecies planning. The resource list that links into the toolkit and is also color coded so users can identify quickly where to find resources for their tasks at hand. We are now very focused on California species resources with information on Tribal and non-Tribal experts to assist in the development of climate adaptation research/planning related to species management. Previously conducted species expert's workshops included Mountain Lions, Beaver, Elk and Kelp/ Abalone Restoration. Reports and contacts to stay connected to research is being added.

4. REPORT BODY:

- PURPOSE AND OBJECTIVES: California Tribes are at different phases of developing climate adaptation and/or resiliency plans. Many Tribes have not yet had the opportunity to align these plans with neighboring Tribes or to integrate Tribal science into regional and statewide plans. Because of this, climate adaptation and resiliency plans within the state of California are missing vital information needed to successfully protect Tribal resources and vulnerable communities. Changes in legislature have recently been enacted to combat the biodiversity and climate change crisis in California using nature-based solutions. This effort has opened the door for many tribes who have sought to gain the position for reintroduction of TEK methods, with the state indicating the need to integrate Tribal science priorities. Thus, catapulting such collaborative efforts to mainstream Tribal management objectives into regional planning and policy.

    - **Objective 1**; Establish Northern California Tribal Consortium for Climate Resiliency (NCTCCR)
        - Through the duration of the project the NCTCCR has many contributing Tribes. However, from the projects original start date modifications came through which participating Tribes would be fully engaged in the program. Due to scheduling conflicts, Tribal departments capacities, and other Tribal affairs some Tribes had to reevaluate their ability to participate (i.e. offer partial assistance when

available and not full engagement in the NCTCCR). Original project goal was to have (4) participating Tribes to establish the NCTCRR, we were able to maintain that goal, but the end participants varied from the start. It would be worth noting to further work that the participating partners consist in more of a fluid manner.

- **Objective 2**; Develop Tribal Science Climate Resiliency Framework
  - **See full Climate Action Resilience Plan (CARP) Framework**. The framework was broken down into 5 action items with subtasks. The action items consist of; Understand Exposure and Community Concerns / Draft Vulnerability Assessment / Investigate Options for Climate Resiliency Plan / Prioritize and Develop Climate Resiliency Plan / Implement Action
- **Objective 3**; Geospatial planning and analysis / community based participatory research for partner tribes
  - Geospatial planning and Analysis were broken down into a subcategory or NCTCCR participation. During the course of the project, it became clear that not all Tribal Climate / Environmental departments were at capacity to be able to conduct the geospatial research necessary for this research goal. With this development of a subgroup was created and participated in separate workgroups. Future project planning should acknowledge which participating Tribes have the capacity to contribute to geospatial analysis and research, this could be capacity in department staff, obtaining software, or availability for continued education / training.
  - Compiled and downloaded data was integrated in to "basemap data" in the Toolkit, as well as integrated into the Vulnerability Assessments.
- **Objective 4**; Tribes pilot the framework and develop Climate Resilience plans**.**
  - Each participating Tribal partner conducted surveys, and integrated individual Tribal science and traditional methods into the outlined Framework for assessment and development of a Climate Resilience Plan tailored to their specific Tribal needs. This portion of the project was altered into a "pilot" aspect to gain an understanding of how the Framework benefited or needed alterations, thus allowing a "living document" that can be continuously revised without consistent approval. Climate resiliency plans were created, and each proved to be different per Tribe's needs, capacity, geographic locations, resource management options, etc. This finding concluded that the research and Framework allow for a varying Tribal use and not a "one size fits all" document.
- **Objective 5**; External share Tribal climate resiliency resources
  - Development of Tribal Climate Resiliency Portal. Compilation of the Framework, resources gathered, and recommendations was integrated into one platform for a more streamlined use for the public via an online portal. This portion of the projected aligned with our Framework by allowing portal users the ability to find and use online tools, resources and decision-making tactics.

- **ORGANIZATION AND APPROACH:**
  - Use of a work plan tracker with a drop-down status tab with a dashboard so that partners can use to keep track of work that has been done and tasks that need to be completed soon.
  - The surveys had several components to meet the differing expertise and responsibilities of staff, leadership and community-members. 1) Staff and Leadership Survey — includes information specific to those working in Environment, safety and tribal leadership, 2) Community Survey — Layperson' language and a suite of narrative type opportunities that can be used to prompt community conversations, 3) Survey Definition List — to assist consistency in answers for better result analytics, 4) References — photos of traditional and invasive species and pathogens that community member may see that the Tribes would like to track.
  - Tribal Partners have initiated community based participatory research using community version of the surveys, the reference tools to support members in reporting what they see consistently. Some have opted to use Survey monkey although it is an expensive tool, we have set this up so that it one entry person can enter multiple responses. We are also reviewing Google's survey tools. We are advocating for

partners to schedule their community meetings to provide preliminary results of either staff and/or community surveys to the community, and to initiate a conversation or to use the portion of the survey that supports narrative responses.
    - Created a server to house data for those with storage constraints and to share data that all Partners will need. We are now able to put their data and mapping into that drive or use it as backup for their systems.
    - The Climate Adaptation Toolkit has its first online reiteration and the Excel back-ends for the resource now are sorted into steps using color coding, one for each step users need to take to complete their vulnerability assessments and climate plans. The toolkit itself has been linked to the resource database. The resource portion contains a Ninety-eight data sources of portals, research databases, resource guides, interactive maps, Climate Plans for cities, counties and Tribes
    - Interregional collaboration and alignment through adding regional climate-related reports by county and city into a tab of the resource database, we are outreaching to regional authors so partners can create relationships with those potential regional partners.
    - There are forty-one (41) Tribal climate-related plans and of these four (4) have been identified as good templates to start from each with a slightly different focus depending on what the Tribe has prioritized. There are eleven (11) regional city or county regional plans in our toolkit resources for Partner Tribes to draw from.

- **PROJECT RESULTS, ANALYSIS AND FINDINGS:**
    - During the Project's duration of March 2022 to August 2024 (end of reporting period) The development of the NCTCC identified key staff responsible for completing and coordinating staff and/or consultants to complete research, administer surveys, facilitate community meetings, hire support, coordinate training for staff support, integrate, author and edit text and coordinate with other staff, departments, Tribes to align actions and completing project goals/tasks.
    - Research and analysis of all survey questions, focus group discussions, ethnographic interviews with delegated Tribal Representatives for Community Based Participatory Research and planning review lead to the final Framework for the project.
    - Identification of tribal resource priorities provided great management strategies to promote cultural resources and resiliency projects involving TEK. Surveys and intertribal assessments of regarding protection of Tribal Sovereignty engaged the NCTCCR to draft Indigenous Research Methodologies. Currently this document has been utilized throughout the project and has continued assessment, edits, and additions to allow a blanket document that can be used in the future for other research and data collecting purposes were TEK is focused.
    - Of 4 participating tribes all conducted vulnerability assessments, data collection and analysis, identification of cultural and ecological resources, thus developing Climate Adaptation Plans using all the tools developed under this project. In addition to the participating Tribes of the NCTCCR, three additional Tribes participated to the extent of their capacity and created Climate Adaptation plans. With the resource guidance of the project Tribes were able to show interest, engage in community engagement opportunities and build a stronger integration of Tribal Science Priorities to their Climate Adaptation Plan.
    - Anticipated continued work post project.
        - Computer graphic components to integrate with the FrameWork
        - Additional data mapping layers throughout the portal for more efficient links to overlapping resource options.
        - Additional workshops on native and/or nonnative species and ecological impacts
        - Additional ArcGIS trainings
        - Seeking additional funding to continue work and expansion of project.

- **OUTREACH AND PRODUCTS:**
    - OUTREACH:

- NTCCR met on a monthly basis throughout the project duration with the first collaboration meeting beginning 3/25/2022 and the final meeting 7/18/2024 (24 in total).
- CIEA was a speaker at the State Water Board conference on climate resiliency on July 17, 2023. The agenda is here: https://content.govdelivery.com/accounts/CAWRCB/bulletins/365b26c
- CIEA staff was interviewed by staff from the Water Board for Nature Based solutions on June 8, 2023
- Met with Patricia Kennedy, the OPR Tribal Affairs Coordinator, Tribal Program Manager, Fifth Climate Change Assessment and additional staff to fold in tribal perspectives on species reintroduction to amend climate threats. Agreed to assist the agency with outreach for this update and may hold a regional workshop to advise the update.
- Met with NOAA US Climate Toolkit Team for guidance on how to their online toolkit, opportunities to collaborate on the CA regional section of their update and integrate what is relevant into our toolkit resources.
- Met with John Moseley from BIA for ArcGIS license and trainers for mapping
- EPA Region 9 Conference in San Diego from 10/24/2023-10/26/2023 to gather information on activities from other Tribes and organizations, climate ready housing for Tribal elders, building resilience and adapting to climate change impacts and studies underway that can be included in the resources.
- Health and Climate Conference hosted by Tribal Climate Health Org and Pala Band of Mission Indians where staff learned about climate adaptation plans that other Tribes have produced, climate resilience tactics, and climate concerns that are prominent today.
- Coordinated with 2 Ph.D. students for ArcGIS Training Series at Sonoma State University; This included scheduling trainings on ArcGIS and related remote sensing, cartography, participatory data and mapping, digitization-lines and polygons. We identified that some individuals are on different levels of expertise when it comes to ArcGIS training and then held two different courses: one beginner and one intermediate. The beginner course was scheduled for 12/1/2023 and the intermediate course on 12/8/2023. A second round of this course was offered on 4/10/24 and 4/12/24.

- **PRODUCTS**
  - Northern California Tribal Climate Portal
  - Climate Action Resiliency (CARP) Framework
  - Indigenous Research Methodologies
  - Tribal Community Needs Assessment
  - Tribal Staff and Council Climate Change Needs Assessment
  - NCTTR Survey Definition list