GRAHAM SUSTAINABILITY INSTITUTE
UNIVERSITY OF MICHIGAN

GRAHAM EMERGING OPPORTUNITIES PROGRAM
CATALYST GRANT FINAL PROJECT REPORT

Project Title: Workshop to Advance Climate Adaptation Initiatives for Indigenous Tribes within the Great Lakes Region

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Summary:

For Indigenous peoples, the natural environment has been a common thread woven through all aspects of Tribal life. In light of our changing climate, the Inter-Tribal Council of Michigan (ITCM) and its member-Tribes recently performed a two-year analysis of projected climate conditions at mid-century, followed by an assessment of Tribal resource vulnerabilities to such conditions, and the identification of climate adaptation strategies which could be collaboratively applied across reservation boundaries and treaty-ceded territories. Through these strategies, the ITCM and its member-Tribes sought to protect natural features, traditional ways, public health, and infrastructure (ITCM 2016).

Since the completion of the ITCM assessment, member-Tribes expressed a desire to gather once again and share stories of the progress and challenges faced in their efforts to apply adaptation strategies to the identified vulnerabilities. In addition, the Tribes have also expressed the need for a better understanding of the susceptibility of Tribal communities to extreme precipitation events, such as the July 2016 storm which led to a State of Emergency declaration for the Bad River Band of Lake Superior Chippewa. In collaboration with the ITCM, the Great Lakes Integrated Sciences and Assessments (GLISA) proposed to host a workshop that would address these stated needs and determine potential steps to address current and future challenges.

Following the funding of our proposal, GLISA and the ITCM worked collaboratively to organize and conduct the proposed workshop. The Tribal Climate Workshop was held during the period of October 9-11, 2017, and was hosted by the Bay Mills Indian Community on the Bay Mills Community College campus in Brimley, Michigan. The workshop had three primary focus topics:

(1) **October 9th**: Sharing stories of Tribal climate research and adaptation planning experiences: successes and challenges.

(2) **October 10th**: Preparing Tribal Communities for the potential impacts of extreme precipitation events: presentation of historical trends, projections and adaptation planning tools.

(3) **October 11th**: GLISA and Tribal education efforts related to creating an awareness, and protection, of sensitive water resources.

Based upon the participant comments following the workshop, we believe that the workshop was able to meet the stated needs of the member-Tribes. Given that the climate programs for a number of the ITCM member-Tribes are in their beginning stages, many of the attendees had never met prior to our workshop. Thus, in addition to serving as a vehicle for informational exchange between the member-Tribes, the Tribal Climate Workshop also was able to help build community between environmental scientists of the various member-Tribes, as well as those from GLISA.

Following a brief review of the project background, the specific outcomes and outputs from the Tribal Climate Workshop are presented.

Project Background:

The ITCM has been a leader in assisting Indigenous Tribes within the state of Michigan address present and plausible future impacts of our changing climate. The ITCM acts as a forum for its member-Tribes: the Bay Mills Indian Community, the Grand Traverse Band of Ottawa and Chippewa Indians, the Hannahville Potawatomi Indian Community, the Keweenaw Bay Indian Community, the Lac Vieux Desert Band of Chippewa Indian Community, the Little Traverse Bay Bands of Odawa Indians, the Match-E-Be-Nash-She-Wish Band of Potawatomi Indians, the Nottawaseppi Huron Band of the Potawatomi, the Pokagon Band of Potawatomi Indians, the Saginaw-Chippewa Indian Tribe and the Sault Ste. Marie Tribe of Chippewa Indians. The goals of the ITCM are to advocate for member-Tribes in the development of programs and policies which will improve the economy, education, and quality of life for Michigan's Native Americans, and to provide technical assistance to member-Tribes, assisting in the development of Tribal regulations, ordinances, and policies applicable to health and human services.

Recently, the ITCM and its member-Tribes conducted the Michigan Tribal Adaptation Planning Project (MTAPP): a collaborative analysis of observed conditions, as well as projected climate conditions at mid-century, followed by an assessment of Tribal resource vulnerabilities to such conditions (ITCM 2016). Additionally, the MTAPP considered the impact of the changing climate on traditional ways of life, public health, and infrastructure (i.e., roadways and transportation, housing and buildings, energy and utilities). Following its assessment of vulnerabilities, the ITCM and its member-Tribes considered a range of fundamental adaptation options based upon the work of Millar et al. (2007), who characterized these broad options as: *resistance* (actions which prevent impacts and protect highly valued resources), *resilience* (actions which improve the capacity of ecosystems to return to desired conditions after a given disturbance) and *response* (actions which facilitate the transition from current to new conditions). The ITCM and its member-Tribes then considered a number of adaptation strategies, concrete actions that could be taken to develop planning and management strategies to protect the vulnerable resources identified as part of this overall work.

In the months which followed the completion of the MTAPP, member-Tribes expressed a desire to gather once again to share stories of the progress and challenges their individual Tribal communities faced in their efforts to select and apply the identified adaptation strategies. The Tribes also expressed the need for a better understanding of the susceptibility of Tribal communities to extreme precipitation events, such as the July 2016 storm which led to a State of Emergency declaration for the Bad River Band of Lake Superior Chippewa in northern Wisconsin. In collaboration with the ITCM, GLISA proposed to host a workshop which would address these stated needs.

Findings:

There were not any specific findings (e.g., results from analysis of data or testing of hypotheses) resulting from this project. While the workshop featured a number of invited presentations, we feel that these are best characterized as "research in progress" and were intended to be shared with the fellow Tribal participants and not to be publically shared at this point.

Outputs:

In our original proposal, we stated that the two projected outcomes associated with the project would be: (1) the facilitation of a workshop to advance Tribal climate initiatives and (2) the development of a training module related to the use of the "TranStorm" evaluation tool, a tool that was designed to allow communities to transpose the rainfall record of an observed extreme storm from one watershed over another watershed of their choosing (TransStorm User's Manual, 2014). The TranStorm tool was developed by Dr. Kenneth Potter and colleagues that the University of Wisconsin.

The Tribal Climate Workshop was successfully conducted during the period of October 7-9, 2017, on the campus of the Bay Mills Indian Community. During the early stages of the work on the TransStorm training module, we found that the program provided to us by the authors would not work on current Windows OS platforms. As a result, we had to change our plans for its intended use as part of the Tribal Climate Workshop. In its place, we utilized a Climate Training Toolkit called "Game of Floods" which was developed by the City of Baltimore (USDN 2017) for the purpose of helping communities consider the impact of rising sea levels on a coastal community. While the sea level rise scenario does not have a direct connection to the Great Lakes Tribal communities, the exercise was successful in providing a training exercise that could be used to help the Tribal communities get experience with the decision making process that would accompany a community infrastructure risk analysis. Following the demonstration of the exercise, a discussion was held about how this tool might be introduced to Tribal administrators in a way that would encourage their engagement with, and use of, the tool.

Finally, during the course of the project, the Project PI served as a mentor for a student participant of the summer Doris Duke Conservation Scholars Program which was run through the University of Michigan School for Environment and Sustainability. The student, Logan Dreher from Brown University, started the development of an inventory of climate adaptation programs by Tribal Nations within, and outside, the Great Lakes region. The inventory was developed, in part, to help the workshop planners to educate themselves on ongoing efforts within the region. Following the completion of that work, a draft copy of the results were shared with the ITCM and Sara Smith, Midwest Tribal Liaison for the Northeast Climate Science Center.

Outcomes:

The proposed outcomes for this project were:

1. Facilitate a workshop to address the state needs of the ITCM member-Tribes, namely to share stories of challenges and successes in recent climate adaptation efforts.
2. Enhance collaborative partnerships among the ITCM member-Tribes.
3. Enhance Tribal capacity in adaptive resource management through development of new skill set related to the determination of potential impacts of extreme precipitation within their individual Tribal communities.

We believe that the Tribal Climate Workshop was able to achieve each of these outcomes. The success of the Tribal Climate Workshop was founded on the trust-based and collaborative effort between the team members from the University of Michigan/GLISA and the ITCM. This collaborative effort began with the development of the proposal itself, when the proposal team members worked to develop a workshop agenda that directly addressed the interests and concerns of the ITCM member-Tribes. Given that one of the primary goals of the workshop was to foster communications and a sharing of experiences amongst the member-Tribes, we felt that it was important to have the initial day of the workshop focus on discussions between, and presentations by, the Tribal participants. The presentations provided by the University of Michigan/GLISA members during the second day of the event focused upon topics requested by the ITCM, again to insure that the information provided directly met the expressed needs of the participants. These presentations focused upon sharing information regarding the historical trends in observed extreme rainfall, as well as a discussion of projections related to extreme rainfall events under plausible future climates. Subsequently, presentations were made by the University of Michigan/GLISA members which focused upon the introduction of existing tools that could be used in adaptation planning exercises related to future extreme rainfall events. The presentations on the final day of the workshop focused upon educational tools/approaches that could be used for climate education/outreach within the Tribal communities within the Great Lakes. The focus of that final session was a presentation by members of the Education Department of the Little Traverse Bay Bands of Odawa Indians.

In additional to fostering communications between ITCM member-Tribes, the Tribal Climate Workshop was also able to foster communication with Tribal representatives outside of the ITCM. There representatives included: (1) Devin Brock-Montgomery of the Bad River Band of Lake Superior Chippewa who shared the experiences of her Tribe following the extreme rainfall event mentioned earlier, (2) Gary Gauthier of the College of Menominee Nation, and (3) Sara Smith of the Northeast Climate Science Center. Ms Smith is the newly appointed Tribal Liaison for the NECSC and this was her first opportunity to meet and talk with the climate scientists associated with the ITCM member-Tribes.

Finally, we were able to achieve our goal of "advancement of scholarship/creation of opportunities for students" through the inclusion of a student researcher in the project by leveraging with the Doris Duke Conservation Scholars Program (described above).

References:

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