

Climate Change, Manoomin, and Culture

AYURG | SSJ | Tags: Indigenous Methods; Creative Output; Interviews; Archival

This cover page is meant to focus your reading of the sample proposal, summarizing important aspects of proposal writing that the author did well or could have improved. **Review the following sections before reading the sample.** The proposal is also annotated throughout to highlight key elements of the proposal's structure and content.



Proposal Strengths	Areas for Improvement
Student had an interdisciplinary project that primarily used archival methods with applied journalism skills, but they wove indigenous research methods across the proposal to show how they would be applied in the context, given the collaboration with Indigenous stakeholders.	The intended audience seems vague and could be better clarified. Additional specification could be helpful to justify the project's methodology in terms of its potential impact.
Student references relationships with relevant cultural experts, a key part of Indigenous methods. This approach reflects the idea that no one person knows everything and local knowledge is just as important as technical experience.	Although there is proof of contact, it is through the sponsor and not the student themselves.
	Although some project aims are present early in the proposal, an explicit research question or declaration of objectives would strengthen the proposal.



Other Key Features to Take Note Of
Creative Output projects should justify their medium (play, performance, poetry, etc) and make an argument for why this is needed and/or will add to important conversations.

The negative effects of climate change on wild rice (manoomin) are an ongoing subject of concern for the Indigenous communities who depend on it as a traditional food source. I seek to raise awareness of this phenomenon and its impact on the Ojibwe in Northern Wisconsin with journalistic research that draws connections between historical manoomin trends and climate change using a multimedia format. The project is aligned with the 5 R's of Indigenous research methodologies (relevance, respect, responsibility, reciprocity, and relationship)¹.

This research is highly relevant for the Ojibwe, who are the first observers to changes in their landscape and who depend on the resources in the natural world to a far greater degree than do other communities. Prior research indicates that climate change will significantly affect manoomin growth in the region in the near future. The Minnesota Department of Natural Resources, in a 2008 study, described the negative effects that warmer temperatures and harsher weather are expected to have on manoomin in the Great Lakes region, including disease, damage from weather events and invasive species, and poor growing conditions². The Northeast Climate Resilience Network suggests that rising water levels due to climate change, which uproot and damage manoomin, are an even greater threat³. Another valuable resource in understanding how climate change will affect manoomin is the Great Lakes Indian Fish and Wildlife Commission (GLIFWC), which represents and works to protect the treaty rights and natural resources of 11 Ojibwe (Chippewa) Bands across Minnesota, Wisconsin, and Michigan. GLIFWC is at the forefront of research on manoomin in the region and conducts annual surveys⁴ and studies to monitor its abundance, quality, and estimated yearly harvest in Northern Wisconsin⁵. In addition, through its Climate Change Program, it estimates the manoomin's vulnerability to effects of climate change to be moderate to high⁶. From the work of GLIFWC and others, it is clear that the future of manoomin — and the Ojibwe traditions that center on it — is uncertain due to the effects of climate change.

Less clear is the impact that climate change has already had on manoomin and Ojibwe harvesting and culture. The current research lacks studies that examine historical information to determine the extent to which current manoomin trends could be due to climate change, and there are few journalistic accounts of the effects of climate change on manoomin growth and the consequent effect on the Ojibwe from manoomin experts (and especially Indigenous experts). This project will propose a connection between historical manoomin trends and climate change, relying not only on data but also on the accounts of GLIFWC members and Ojibwe leaders who have seen first-hand the current impact of climate change on manoomin and Ojibwe tradition.

GLIFWC recently obtained a set of diaries, spanning from 1954 to 1985, from the late Northern Wisconsin outdoorsman Paul Munninghoff. GLIFWC considers Munninghoff an expert perspective on manoomin not only for his incredibly detailed, everyday observations on the quantity and quality of the rice and his harvesting experience over this 30-year period, but also for the relationships he formed with the Ojibwe Bands in Northern Wisconsin and his status as an honorary tribal member. Under a URAP grant earlier this year, I extracted manoomin data from Munninghoff's detailed daily diary recordings and created a quantitative database organized by location. This involved converting his consistent, descriptive observations on manoomin quality to a quantitative 8-point rating scale and analyzing his records of abundance.

This research is designed to be respectful of GLIFWC's goals of identifying and making publicly accessible information about the manoomin trends in the diaries. The audience for this project is the general public, and the resulting research will be made available as a free, online resource with the goal of education about manoomin and climate change. To accomplish this, I plan to use NU Knight Lab's StoryMap to create a multimedia presentation of the data centered on a map of Northern Wisconsin. This format will allow users to "walk" the lakes Munninghoff frequented and, at each location on the map, view graphs of his observations of rice quality and quantity compared to current GLIFWC data, videos of interviewees discussing the lakes and how they have changed over the last several decades, and current and archival photos of lakes

The focus of the project is clear within the first paragraph.

Background draws on relevant work with clear logic flow that clearly sets up the gap in knowledge.

Identifies gap in knowledge.

An explicit research question would help clarify the aims of the research.

Justifies population.

Justifies journalistic approach and use of Indigenous methods.

While the student does a good job of describing what the creative output will look like, they could benefit from further context on what StoryMap is and why it is the right medium.

with manoomin beds (Appendix B — sketch of StoryMap). These elements will tell the story of the changes of manoomin over time while incorporating information about the resulting effects on Ojibwe culture and background information about Munninghoff. (Appendix C — project completion timeline.)

Before creating the final StoryMap, I will collect the remaining data necessary to tell this story effectively. I am fully committed to engaging in this research responsibly; I am working within the cultural protocols determined by GLIFWC and placing a strong focus on Native voices. Building on my previous work under URAP, I will use the database I created from the diaries to graph manoomin abundance and quality trends from that period and compare them to GLIFWC data from recent years, adding climate data where appropriate to make connections between changes in climate and changes in manoomin. A tribal media specialist has already been hired and has taken extensive photo and video footage of our lakes of interest, which were determined by their inclusion in Munninghoff's writings and by GLIFWC's continued interest in the manoomin there (Appendix D — list of lakes). In partnership with the Wisconsin Historical Society, I will search photo archives for evidence of manoomin in those same lakes in order to compare them then and now. The media specialist will conduct interviews with people familiar with manoomin harvesting in the region who can speak to the changes in manoomin abundance and quality over time and who can provide information on how these changes are connected to climate change. I have contacted individuals who are connected to manoomin harvest in the region, GLIFWC, or Munninghoff and who can provide these insights. Munninghoff's daughter Ann, GLIFWC biologist Peter David, and an elder at Mole Lake have agreed to be interviewed (Appendix E — support). In their interviews, we will ask them to discuss the quality and abundance of manoomin when they first became familiar with it and their perceptions of its change over time, connections between changes in the natural landscape and in manoomin, and other topics (Appendix F — questions). I aim to practice responsible research by having the media specialist conduct the interviews to minimize potential COVID spread that could come with traveling to Wisconsin and conducting them myself. She works under COVID precautions and will conduct interviews at the comfort of the interviewees.

This community-based research is centered on reciprocity; although it is an important learning opportunity for me, it is also a way to contribute meaningful information that will amplify the concerns of GLIFWC and the Ojibwe Bands they represent. After finalizing data collection and compiling my findings into the StoryMap, and as soon as COVID restrictions allow, I plan to travel to Northern Wisconsin to present my findings and the StoryMap to GLIFWC and Munninghoff's daughter, Ann, for feedback. During this trip, I will also visit the lakes of interest to make observations to add to the StoryMap and will meet any other people my faculty advisor (Patty Loew) suggests may help me gain cultural understanding of Ojibwe traditions involving manoomin. My faculty advisor's relationships with the Ojibwe community, GLIFWC, and Munninghoff have allowed me to form my own connections, shaped this research, and informed how best to share it with the public. The trip is imperative for me to be able to understand and convey the cultural significance of manoomin to the Ojibwe appropriately in the StoryMap and to ensure that it fulfills the goals of those connected to this project.

I feel confident that I am able to apply the knowledge I gained in my URAP project to complete this research. In addition, as a computer science major, I've gained experience both in organizing data and in creating user-friendly interfaces that I can apply to the StoryMap creation process. I'm committed to this project, the people involved in it, and making it accessible to the public. This research fully fits my own academic and professional goals. It is extremely important to me to gain research experience in a variety of fields, and this project allows me to learn about and engage in fascinating ecological, historical, and journalistic research while applying skills from my own field and contributing to community-engaged research that has deep, cultural significance to the Ojibwe people.

Methods are defined and explicitly justified in terms of how each step helps to answer the research questions.



Justifies focus on specific set of lakes.



Typically, URGs focus on the independent contribution of the student. This represents a project appropriate adjustment because the student specifically mentions a collaboration with a tribal media specialist.



Researcher lists preparation using relevant previous experiences. They connect it back to their personal goals.



Mentions previous grants.



APPENDIX A: CITATIONS AND BIBLIOGRAPHY

Citations

1. Danielle Tessaro, Jean-Paul Restoule, Patricia Gaviria, Joseph Flessa, Carlana Lindeman, and Coleen Scully-Stewart. "The Five R's for Indigenizing Online Learning: A Case Study of the First Nations Schools' Principals Course." *Canadian Journal of Native Education* 40, no. 1 (2018): 125-143.
2. Minnesota Department of Natural Resources. "Natural Wild Rice in Minnesota." 2008.
3. Northeast Climate Resilience Network. "Manoomin (Wild Rice)." Accessed November 8, 2020, <http://www.nicrn.org/manoomin-climate-change-impacts--conservation.html>.
4. Great Lakes Indian Fish and Wildlife Commission. "Summary of Off-Reservation Manoomin (Wild Rice) Harvest Regulations." Accessed November 8, 2020, <http://data.glifwc.org/manoomin.harvest.info/>.
5. Peter David. "Manoomin (Wild Rice) Abundance and Harvest in Northern Wisconsin in 2013." Great Lakes Indian Fish and Wildlife Commission, 2013.
6. Great Lakes Indian Fish and Wildlife Commission. "Climate Change Vulnerability Assessment." Accessed November 8, 2020, <https://www.glifwc.org/ClimateChange/VulnerabilityAssessment.html>.

APPENDIX B: SKETCH OF STORYMAP FORMAT



In this very basic sketch of the final StoryMap, an example background map is shown on the left. Users will be able to click the pins on the map to learn about different lake locations and the associated data. The middle and right images are examples of how that data will appear when the pin is clicked. An image or video can be attached to the top of the information panel, and the text below would summarize that information. An example graph could be Munninghoff's abundance ratings for Boulder Lake for the years 1954-1985 overlaid with GLIFWC data on abundance for that lake over the last 10 years. The text would explain the implications of that data. I expect to create one of these pages for each video clip or graph I want to highlight.

APPENDIX C: PROJECT COMPLETION TIMELINE

Before Winter Break 2020: Archival images from Wisconsin Historical Society, diary data, and GLIFWC data identified

During Winter Break 2020: Working version of StoryMap with data and images created

Before February 1, 2021: Interviews finished (pending COVID restrictions), working version of StoryMap edited

Between February 2021 and end of Spring Break 2021: Travel to WI to present StoryMap, edits to StoryMap, final version of StoryMap completed and released

APPENDIX D: LAKES OF FOCUS

The following are the Northern Wisconsin locations that will be used for the StoryMap. These were chosen because Paul Munninghoff frequented them and noted their manoomin abundance and quality frequently and because they are also points of interest for GLIFWC's climate change studies today.

Allequash Lake

Keego Lake

Fish Lake

Rocky Run Flowage

Round Lake

Spur Lake

WI River (including Munninghoff Marsh, where Munninghoff lived)

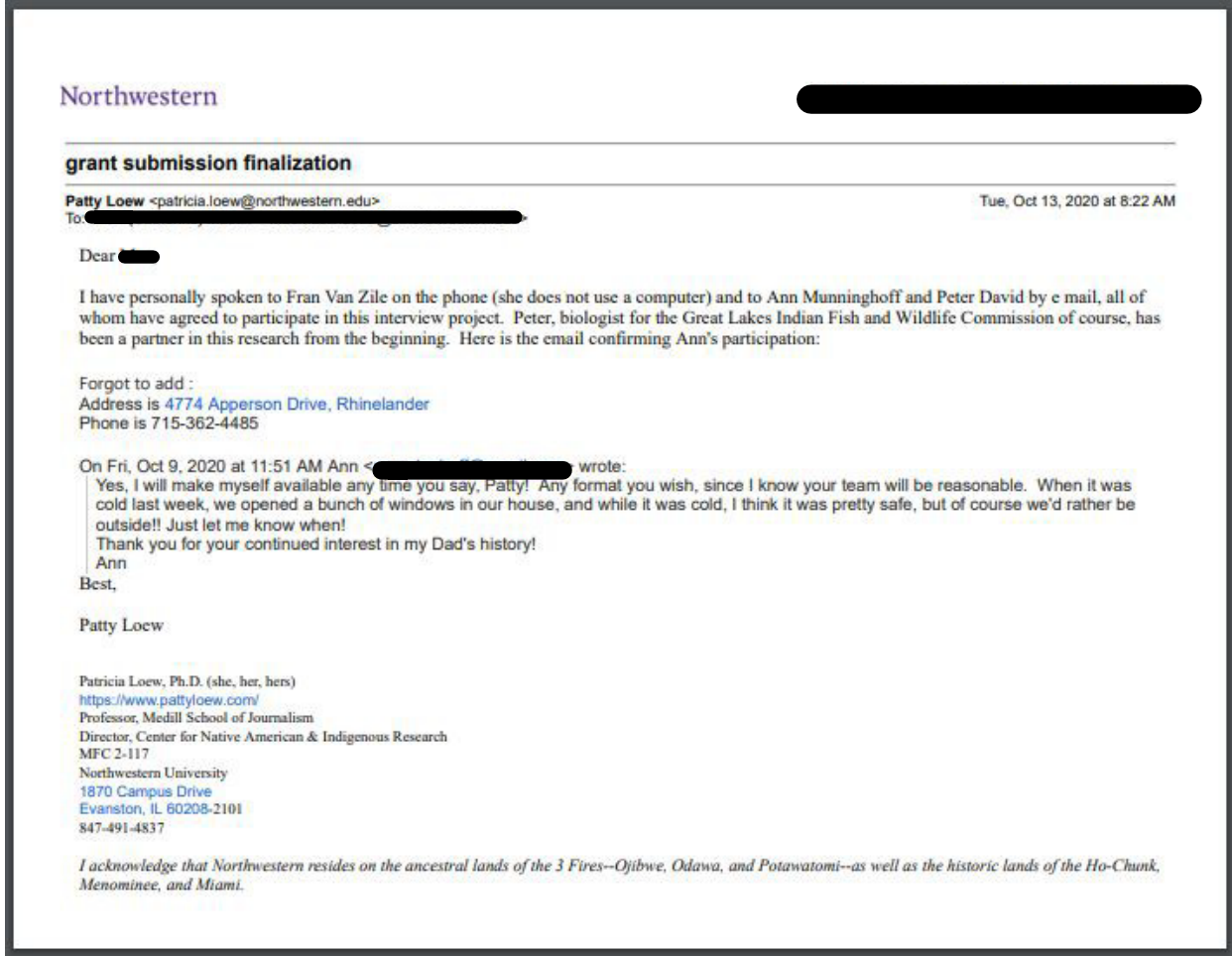
Boulder Lake

Island Lake

APPENDIX E: INTERVIEW CONFIRMATIONS

The following is the confirmation from my faculty sponsor, Patty Loew, that our interviewees have confirmed they are interested in participating in the project and have agreed to be interviewed.

It is the most helpful for the committee to see that the student has had direct contact and confirmation from the interviewees.



APPENDIX F: INTERVIEW QUESTIONS

The following are the interview questions that will be used to start conversations with our interviewees about manoomin, climate change, and, in some cases, their knowledge of Paul Munninghoff. Not all participants will be asked all questions, depending on whether they knew Munninghoff and on their relationship with manoomin.

1. How would you describe Munninghoff?
2. How would you describe the relationship he had with the Mole Lake Ojibwe?
3. How would you describe his relationship with manoomin?
4. How would you describe his relationship with the natural world in general (hunting, trapping, etc)?
5. What memories do you have of these lakes (give her list ahead of time)? What can you tell us about Munninghoff's relationship with these specific locations?
6. What are some of your memories involving wild rice?
7. Did you have family traditions that centered around rice?
8. How has your father's work with manoomin impacted your life?
9. What is your relationship with manoomin today?
10. How has the rice changed since Munninghoff harvested it?
11. What information about manoomin is important for people to know?
12. What are your hopes for the diaries? What do you think people today can learn from them?
13. How has the rice changed over your lifetime?
14. What do you think the future holds for wild rice?
15. What other changes in the landscape have you noticed over your many years at Mole Lake?
16. How has the weather/climate changed at Mole Lake?
17. Can you describe the importance of rice to the natural landscape (wildlife, water bodies)/the natural relationships between all of these things?
18. How would you describe the relationship between the Ojibwe and manoomin?
19. Wild rice has been called an "indicator species"-- what do we mean by that?
20. Why should we be concerned that wild rice is migrating or disappearing?
21. What are the biggest threats to manoomin?
22. What do we know about how climate change affects manoomin?
23. What kind of work does GLIFWC do regarding climate change?
24. What are some important steps we can take to protect and preserve wild rice?
25. Describe each of the lakes and how they have changed over time?

APPENDIX H: BUDGET

A. Research-Related Expenses (Data Collection; Analysis)		
TYPE	COST	NOTES
1. Consumable Materials	\$0.00	
2. Non-Consumable Materials	\$0.00	
3. Equipment/Durable Goods	\$0.00	
4. Research Subject	\$0.00	
5. Fees	\$0.00	
6. Transcription Services	\$0.00	
7. Tuition/Mandatory Fees	\$0.00	
8. Instructional Materials	\$0.00	
9. Living Expenses	\$0.00	
10. Other	\$0.00	
B. Travel-Related Expenses		
TYPE	COST	NOTES
1. Airfare (round trip)	\$200.00	If air travel is prohibited, these funds will be used for a rental car to get to Northern Wisconsin.
2. Housing	\$400.00	Hotel stay
3. Food	\$200.00	
4. Local Travel Expenses	\$200.00	Car rental
5. Other	\$0.00	All figures assume a 4-6 day trip.
C. International-Related Expenses		
TYPE	COST	NOTES
1. Entry Visa or Visas	\$0.00	
2. Required Vaccines	\$0.00	
3. Recommended Vaccines	\$0.00	
4. Travel Health Insurance (HTH)	\$0.00	
5. Passport	\$0.00	
6. Other	\$0.00	
TOTAL EXPENSES		
TYPE	COST	NOTES
Total Research Expenses (A)	\$0.00	
Total Travel Expenses (B)	\$1,000.00	
Total International Expenses (C)	\$0.00	
TOTAL EXPENSES	\$1,000.00	

I have been awarded Northwestern CNAIR's Undergraduate Fellowship. This is not a source of potential funding for these expenses.