

Multiple research positions available within interdisciplinary Tribal-UMN partnership focused on protecting wild rice

Kawe Gidaa-Naanaagadawendaamin Manoomin/Psiŋ (First we must consider Manoomin) is a unique interdisciplinary research collaboration focused on protecting Manoomin, with a core commitment to prioritizing tribal knowledge, perspectives, and needs. Manoomin (Ojibwe)/Psiŋ (Dakota)/*Zizania palustris* (scientific name)/wild rice (common name) is an aquatic grass with highly nutritious grains that grows in shallow waterways throughout the Great Lakes region. To the Ojibwe tribes across the region it is a sacred food, medicine, and gift from the Creator, which they have stewarded, hand-harvested, and processed for millennia. Manoomin is also a highly sensitive species. Its range and abundance have been in decline because of multiple stressors, including disturbed hydrology, declining water quality, and land-use and climate change.

The project began in 2018 with a grant from the UMN Grand Challenges Program and the Institute on the Environment, bringing together UMN social science and biophysical researchers and partners representing several tribes and inter-tribal organizations. It has now expanded to include participants from 9 tribes, 5 tribal natural resource agencies, 2 inter-tribal organizations, and 20 student researchers. With additional support from the National Science Foundation and United States Geological Survey, we are continuing to grow our research partnership and commitment to Manoomin conservation.

See: <https://manoominsin.umn.edu> for more information about the Kawe Gidaa-Naanaagadawendaamin Manoomin/Psiŋ (First we must consider Manoomin/Psiŋ) project.

We are seeking applicants for the following open positions:

- **Integrated Social Dimensions (Department of Forest Resources).** One graduate student (MS or PhD) to focus on understanding the influences of human values, policies, and practices on manoomin ecosystems. The student will examine social aspects of human/manoomin relationships, manoomin management, manoomin harvest, and environmental change. To do this, the student will conduct interviews, focus groups, surveys, and archival research. A successful student will engage in the entire interdisciplinary research process and be able to bridge not only social and biophysical sciences but also traditional ecological knowledge and western natural resource sciences. Students with experience working with tribal or Indigenous communities are highly encouraged to apply. The student will be located in the [Department of Forest Resources](#) and will be advised by [Prof. Mike Dockry](#) and others on the project. [Application deadline is December 15, 2020.](#)
- **Environmental Integration (Department of Earth and Environmental Sciences).** One postdoctoral researcher to perform integration across the different environmental and ecological components of manoomin, involving Indigenous worldviews and research methods. This postdoc will work closely with tribal partners and other researchers to synthesize hydrological, sediment, vegetation, geochemical, and social science data from human-influenced manoomin study sites. Excellent collaboration skills will be important for doing this integration work. The ideal applicant will have experience with Indigenous research methods as well as some area within geosciences, environmental science, and/or ecology. A commitment to learning about Indigenous histories, perspectives, and knowledge systems will also be necessary for this position. This postdoc will be located in the [Department of Earth and Environmental Sciences](#) and will be advised by [Prof. Crystal Ng](#) and co-advised by [Prof. Mike Dockry](#) and others on the project. Postdoc applicants may directly contact Prof. Crystal Ng at gcng@umn.edu with their CV and cover letter.

- **Biogeochemistry (Department of Earth and Environmental Sciences).** One graduate student (MS or PhD) to examine the biogeochemical aspects influencing manoomin health and ecosystems. This student will focus on field and laboratory/analytical examinations of manoomin waters and sediments, but should be committed to maintaining and advancing the overall project goals and collaborative nature of the project. A successful student will develop expertise in a variety of analytical geochemistry techniques so should be comfortable engaging with other students and researchers to learn new approaches and instrumentation. A commitment to learning about Indigenous histories, perspectives, and knowledge systems will also be necessary for this student to be successful. This student will be located in the [Department of Earth and Environmental Sciences](#) and will be advised by [Prof. Cara Santelli](#) and co-advised by others on the project. [Application deadline](#) is Dec. 15, 2020.
- **Hydrological Modeling (Department of Earth and Environmental Sciences).** One postdoctoral researcher, or PhD student with a strong computational background, to implement hydrological and statistical models and contribute to fieldwork. This postdoc/student will build upon existing modeling software to understand the response of manoomin watersheds to climate change and other human influences. A unique aspect will be to engage tribal community members and incorporate their knowledge and observations into the model development, calibration, and interpretation. The ideal applicant will have a background in hydrology as well as interest in related geoscience and ecology topics; be able to use Python, Matlab, and/or R; and have some exposure to or interest in Fortran, C++, and/or cluster computing. A commitment to learning about Indigenous histories, perspectives, and knowledge systems will also be necessary for this position. This postdoc/student will be located in the [Department of Earth and Environmental Sciences](#) and will be advised by [Prof. Crystal Ng](#) and co-advised by [Prof. Dan Larkin](#) and others on the project. [Application deadline for PhD students](#) is Dec. 15, 2020. Postdoc applicants may directly contact Prof. Crystal Ng at gcng@umn.edu with their CV and cover letter.
- **Ecology (Department of Fisheries, Wildlife and Conservation Biology).** One graduate student (MS or PhD) or staff researcher to characterize manoomin's ecological niche, including environmental relationships and interactions with other plant species, and evaluate the effects of management actions on manoomin health. This work will involve substantial fieldwork and analytical components. Strong collaborative skills will be needed for integrative work with other students, researchers, and tribal partners. The ideal applicant will have field-based research experience in plant and/or aquatic ecology and enthusiasm for statistical modeling. A commitment to learning about Indigenous histories, perspectives, and knowledge systems will also be necessary for this position. The position will be based in the [Department of Fisheries, Wildlife and Conservation Biology](#) and supervised by [Prof. Dan Larkin](#) and co-supervised by others on the project. If filled as a graduate student position, the student will be based in the [Conservation Sciences Graduate Program](#), which has a preferred [application deadline](#) of Dec. 15, 2020. Potential applicants can contact Prof. Larkin at djlarkin@umn.edu.
- **Ecohydrology (Department of Fisheries, Wildlife and Conservation Biology).** One graduate student (MS or PhD) to investigate how the ecohydrology of manoomin watersheds will be influenced by climate-driven changes to species and functional trait composition of surrounding forests. Strong collaborative skills will be needed for integrative work with other students, researchers, and tribal partners. The ideal applicant will have research experience in plant community or forest ecology or related disciplines. A large component of the work will involve synthesis and analysis of existing forest cover and functional trait datasets, complemented by fieldwork to collect additional data. A commitment to learning about Indigenous histories, perspectives, and knowledge systems will also be necessary for this position. The student will be based in the [Department of Fisheries, Wildlife and Conservation Biology](#) as a member of the [Conservation Sciences Graduate Program](#) and will be supervised by [Prof. Dan Larkin](#) and co-supervised by [Prof. Crystal Ng](#). [Conservation Sciences](#) has a preferred [application deadline](#) of Dec. 15, 2020. Potential applicants can contact Prof. Larkin at djlarkin@umn.edu.