

Teaching Notes

MANOOMIN: WHERE SCIENCE MEETS THE SACRED

Introducing Manoomin: Where Science and the Sacred Meet

There are three main modules in this case study: [Intercultural Competence](#), [Stakeholder Analysis](#) and [Systems Thinking](#). When teaching this case study, you can choose your own adventure based on the needs of your students and objectives of your course. Use part of a module, a whole module, or all three modules. It's up to you! We've attempted to make this as user friendly as possible so even if you don't have expertise in systems thinking, intercultural competence or stakeholder analysis you have plenty of tools and [resources](#) to tailor the case study to best achieve your objectives.

Wild rice is an annual grass, different from white rice in nutritional content and in how it grows, found in thousands of water bodies across Minnesota and Wisconsin. In the Ojibwe language, the word for wild rice is *manoomin*. Manoomin is of great spiritual and cultural significance to the Ojibwe and protection of wild rice in Minnesota has led to a series of political debates, rulings and conflict between various stakeholder groups including, mining companies, environmental groups, the University of Minnesota and tribal communities.

The Modules

- The [Intercultural Competency module](#) focuses on wild rice as a spiritually significant part of community livelihoods, food traditions and culture for Ojibwe and other American Indian people.
- The [Stakeholder Analysis](#) examines the public policies related to wild rice protection and on the human stakeholders who affect and are affected by these policies.
- Finally, the [Systems Thinking](#) portion of this case asks students to consider how humans, other species, and social systems interact with wild rice in complex ways.

Adaptations

Help bring the case study to life by:

- Adding your personal experiences (especially in the intercultural competence module) of missteps you've made, lessons you've learned, and examples that have worked well
- Invite guest speakers that can share Traditional Ecological Knowledge (TEK), perspectives from industry, law-making and policy, etc.
- Tailor your own readings and assignments to best match the previous and upcoming course materials

Intercultural Competence

Teaching Notes

Preparation for 75 Minute Class

Pre-class: Have students complete the [Cultural Competence Self-Assessment](#) or another intercultural assessment of your choice and read [blog](#) on why self-awareness is the starting point of intercultural competence. Ask students to watch video overviews on the Anishinaabe perspective of your choosing before class. Examples can be found in the [module](#).

In-Class Materials: Print-outs of diversity wheel [exercise](#).

At start of class: Have students complete a one-minute paper on why self-awareness is the foundation of intercultural competence.

Lesson Plan: Class One

One-Minute Paper & Discussion (15 min)

Start with a one-minute paper and then dovetail into a discussion on self-awareness. The one minute paper is typically actually takes three-five minutes. Invite students to share personal stories, experiences and reflections on why self-awareness is the foundation and starting point of intercultural awareness.

Diversity Wheel (30 min)

Handout Page One: Examine the diversity wheel and have students work in small groups to examine what dimensions could be missing (7 minute brainstorm).

Handout Page Two: Have students do a quick research scan of why clans are important to Anishinaabe identity. (8 minute research scan followed by brief 5-minute discussion).

Handout Page Three: Ask students to start filling out the wheel with components of their identity. Make sure they understand what they're doing and that everyone is off to a start.

After starting the work, ask the class to turn in the completed diversity wheel at the start of the next class (10 minutes).

Introduce Case Study & the Platinum Rule (15 min)

Discuss briefly the platinum rule and how it differs from the golden rule. Then, students take turns reading out loud the introduction and texts.

Sophia's Dilemma: Small Group Discussions (10 min)

Have students work in small groups of 4-5 (ideally five) and discuss the four questions. You can also ask these questions to the full class if you're short on time.

Wrap-Up (5 min)

Remind students to complete the diversity wheel, and let them know at the beginning of the next class you will discuss the following question: *"If you were meeting someone from another culture, how would you describe your culture?"* and continue on with the case study.
90 minute class adaptation: With the extra 15 minutes, spend more time with the initial discussion on the importance of self-awareness and the diversity wheel.

Lesson Plan: Class Two

Small Group Discussions (10 min; 5 min share with class)

Have students answer the question: *"If you were meeting someone from another culture, how would you describe your culture?"* Start in small groups and then extend to wider class.

Part II of the Case Study (30 min)

Have students brainstorm the elements of the training program which includes three primary components. You can divide the class into six by assigning two small groups to each component. They will not be able to cover all three components in 30 minutes.

Present the Training Elements (20 min)

Have each group give a three-minute (or less) overview of what they decided to focus on.

Class Wrap-Up (10 min)

Ask each student to write down one key take-away from the case study. Hopefully, the themes of self-awareness and the platinum rule will have emerged in the presentations and take-aways. Consulting with the tribal communities and developing genuine relationships is another aspect that should come to light.

90 minute class adaptation: With the extra 15 minutes, spend more time letting students brainstorming the training elements perhaps by adding another prompt if they finish the original one quickly.

Stakeholder Analysis Teaching Notes

Preparation

Pre-class: Divide students into four groups and assign readings by group. The students assigned the stakeholder roles should review the recommended reference materials or do their own research to gain deeper knowledge about the perspective, influence and points of leverage for the assigned role.

1. [Scientists](#) – State Agencies such as Minnesota Pollution Control Agency (MPCA) or Department of Natural Resources (DNR) or higher education affiliated, usually adherents to Western Science.
2. [Tribal Nations](#) – Ojibwe Tribes, Dakota and other local tribes, multiple tribe organizations, tribal members, elders and holders of Traditional Ecological Knowledge (TEK).
3. [Environmentalists](#) – Various non-profit organizations focused on water, conservation, environmental justice, sustainability and related areas, focused locally to internationally.
4. [Mining Companies and Miners](#) – Mining companies propose different mines with varied levels of risk/opportunity and miners or former miners tend to support the company views.

Direct students to the Stakeholder Analysis website [module](#) for the following briefing materials:

- Briefing Introduction with Mining Map
- [Current and Proposed Wild Rice Water Sulfate Standards](#)
- Wild Rice Case [Timeline](#)
- Environmental Justice [Overview](#)

In-Class Materials: Printouts of rainbow diagram

Lesson Plan

This class session can be offered as a stand-alone with pre-readings.

In-Class

Students should review their briefing materials prior to class. In class, students should then spend time discussing the different stakeholder groups before they complete the Rainbow Diagram Stakeholder Analysis.

Systems Thinking Sample Lesson Plan

Preparation

Pre-class: Divide students into four groups and assign readings by group.

In-Class Materials: Provide markers of multiple colors and blank paper for system sketches.

At start of class: Load Manoomin: Food That Grows on the Water [video](#).

Lesson Plan

Case Introduction (15 min)

Introduce the case as a way to explore the interconnections between environmental and social elements that are part of the ecological and social system affecting wild rice in Minnesota. Manoomin video can be shown to provide context of the sacredness of wild rice to the Ojibwe people.

Intro should cover:

- Acknowledgement of treaties between the United States and the sovereign tribal nations.
- The focus of this case is on the impact of sulfate on rice in Minnesota.
- Minnesota Pollution Control Agency decision in 1973, more recent research leading up to current question: how to protect wild rice?

Systems Thinking Intro (10 min)

Instructor leads discussion on What's a system? and provides background on systems thinking, the idea of a system model and using a concept map to show relationships. Students are first asked to think of how they might see their university as a system and that all models are simply models, not able to completely describe a system. How might wild rice be part of a larger system?

Group Work on Ecological System (15 min)

Divide students into groups that include students who were assigned each of the various pre-readings. Provide them each with the Student Handout "Systems thinking – Ecological factors related to wild rice and sulfate". Students are to share the ecological components from their readings and the handout and make an initial sketch of the different elements that are interacting (wild rice, iron, sulfate, sulfite, water, other plants, waterfowl, red-winged blackbirds, sediment). Depending on how you plan to assess the students, you can have them either create their own system drawing or create a group system map.

Social & Environmental Interactions (10 min)

Return to large group discussion. If time allows, the instructor can lead plenary discussion

on natural system factors. Ask students if there were social factors that came up in their discussions to initiate the value of considering the interaction between social and environmental factors. Use illustration from Díaz, S., et al. (2015) to illustrate interactions and the importance of scale in systems thinking. Briefly discuss what scale is appropriate for wild rice and how the decisions (i.e. local, statewide, regional) would be affected by scale.

Group Work on Social and Environmental System (15 min)

Students return to group to share which social groups and institutions they read about would be part of the system interacting with the wild rice. Instruct the students to start labeling the interconnections to clarify the influence they see between the elements on their map.

Leverage Points and Wrap-up (10 min)

Return to large group discussion. Introduce leverage points. Have the student groups propose leverage points (if time allows) and lead large group discussion on potential leverage points. Discuss assignment, if applicable.

Adaptations For 75 Minute Vs. 90 Minute Class

	75-min plan	90-min plan
Case Introduction	15 min	15 min
Systems Thinking Intro	10 min	10 min
Group work & report back on ecological system	15 min	15 min
Social & environmental interactions	10 min	10 min
Group work & report back on social and environmental system	15 min	15 min

Group work on leverage points	N/A	10 min
Leverage points and Wrap-up	10 min	15 min

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