Teaching Notes

By ***Ann Russell***

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# Course Information

Department: Biology

Level: **Upper Undergraduate**

Course type: **Lecture**

Students: **Majors**

Number of Students: 80

# Module Information

Original Module Name: “Investigating Human Impacts on Stream Ecology: Locally and Nationally”

Link to Original: <https://tiee.esa.org/vol/v8/issues/data_sets/nuding/abstract.html>

Adapted Module Name: N/A

Modified Module Name: “A Tough Choice in Watershed Management”

Files associated:

1) Activity Handout for Students: “A Tough Choice in Watershed Management\_Russell.docx”

2) Activity Key for faculty, also make available to students after they’ve finished the activity: “A Tough Choice in Watershed Management\_Key\_Russell.docx”

3) Schedule for conducting this as a Team-based Learning activity: “A Tough Choice in Watershed Management\_Schedule.docx”

**Adaptations for Inclusivity**:

* This activity will take place during Module 5 out of 6 in the course, so that students will have had lots of practice with using Excel spreadsheets, calculating basic statistics and interpreting data by that point. The idea is that students who did not enter the course with those skills will have had time to catch up.
* I will use this adaptation, i.e., the activity, in a course that is set up in a Team-Based Learning (TBL) format in which students stay in the same teams for the whole semester. I use the CATME Team-Maker, a tool that allows the instructor to assign students to teams based on criteria that the instructor chooses (<https://info.catme.org/catme-tools/team-maker/>). In TBL, the goal is for each team of 5-7 members to encompass a range of skills, e.g., writing, software, type of thinking (big picture or detail-oriented). The criteria can also include gender and race/ethnicity. As such, instructors can set teams up to be diverse, but also keep minority students from feeling isolated, i.e., having at least 2 per team. The team-based activities are designed to require multiple types of skills, with the goal that students realize that their differences serve as a strength when it comes to completing the activities successfully. They do the activities during class time, so they don't have to deal with arranging meeting times outside of class.

Modification of Learning Goals:

None

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*(Think about what you would like to read about this activity if you came back to it in 2 years)*

Suggestions for this section (not all required, and extras always welcome):

* What did you change and why?

I created a Team activity from this exercise, aligning it with the 4 S’s of TBL activities. That is, for each activity we 1) focus on a **S**ignificant problem, 2) give each team the **S**ame problem, 3) devise their response so that they have to choose among four **S**pecific choices for a solution, and 4) all teams report their choice **S**imultaneously. The idea is to set things up so that there is not a single correct answer, so that not all teams will have the same specific choice. Because all students/teams will have worked on the same problem and it is a significant one, they become invested enough in their specific choice. After all teams report their choice simultaneously, we have a class-wide discussion in which students will hear other viewpoints and get to work on their speaking skills when they explain their team’s choice.

* How did the activity go?
  + What went well and why?
  + What went wrong and why?

I won’t get to use this until November 2020.

* What was the prep like?
  + How much time went into prep?
  + Did you have to do any prep (i.e. grow cultures, grow seeds, order supplies) ahead of implementation?

No significant prep, except to make copies of the activity so that each team has a hard copy.

* Would you do this activity again?
  + What would you change in the future?
* What do you wish you’d known before you ran the activity?
* Is there anything else you would like to make note of?
* How does this activity fit in your overall course curriculum?

This activity comes late in the course, after we have covered N cycling and aquatic ecology, and students have gained skills in using spreadsheets.

* In what ways, if any, did you modify your teaching practice with this activity?

No big modification.