



River Connections: sharing science through film

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Summary of project

Students are given the opportunity to learn a process-based approach to river research, by developing research questions about river form and function in Maine. Students filmed themselves while collecting and analyzing their data. The final product is a 6-minute video, created in Final Cut Pro X, that contained a description of their project, their hypotheses, analysis/results, and conclusions.

Content/Concepts Goal

Students learn how to develop and implement their own original research project.

Step 1: Developing a research project

Students write a 2 – 3 page proposal:

- Develop reasonable testable hypotheses based on concepts learned in the course
- Determine appropriate methods
- Describe field site
- Discuss expected results



Downstream of old mill dam on Royal River

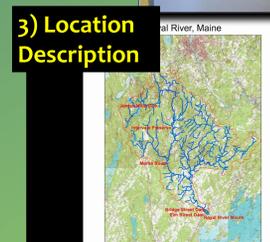
Pointers on developing the research project

- Allow time to meet with groups and discuss their project/hypotheses after they have turned in their proposal.
- Do not have a proposal and lab due the same week.
- Make sure that you have spent enough class time covering important concepts before proposals are due.
- Connect each lab with the final research project.

Skills Goal

Students learn how to communicate their science to the general public through film.

Step 3: Making the video



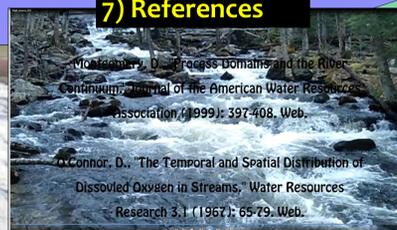
4) Methods in both the field and lab



6) Discussion and Conclusions

- Low gradient sections experienced more deposition... human influenced?
- Higher gradient systems near dams, larger bed material downstream.
- Higher up watershed, more alluvial system, closer to dams more bedrock like system (supply limited).

7) References



Step 2: Collecting and analyzing the data

- Spend at least one lab training students on how to collect geomorphic and hydraulic data.
- Spend a second lab training students on how to analyze the data they have collected.



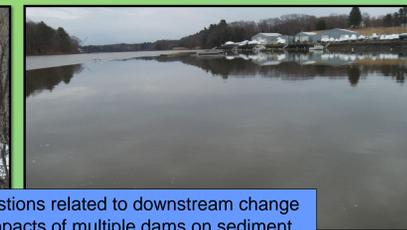
Collecting cross-section data



Collecting dissolved oxygen data



Students developed research questions related to downstream change in a watershed and subsequent impacts of multiple dams on sediment transport and water quality.

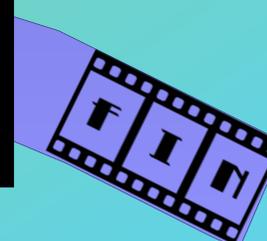


Pointers on collecting data with students

- At least two to three lab periods need to be made available to collect data at the student's field sites. You could combine the training and data collection in one lab.
- It is helpful to have students working on the same field site, but collecting different data. Student's from different groups worked together on collecting data for all of the projects.

Final Thoughts:

- Students learned many new skills through the development and implementation of this research project.
- A lot of outside class time was needed to complete the project before the end of the semester.
- The software needs to be taught to the students in the first half of the semester.
- Students needed more time to develop a storyboard for their film. Students needed more time and guidance in interpreting their results.
- A rough draft of the video needs to be due before the final deadline.
- I found that the video project allowed students who did not excel at writing to excel in a different format.



Film is fast becoming one of the most effective ways to get scientific information across to the general public. Students need to be given the opportunity to develop skills in both research and communication in their college science courses.

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