Transparency in Learning and Teaching (TILT)

Structuring Content series, Certificate of Teaching and Communication Program

October 2018

Jennifer Archambault

Assignment: Use the Natural Capital Project's website and Integrated Valuation of Ecosystem Services and Tradeoffs (InVEST) program to quantify an ecosystem service.

TILT: apply the framework to explicitly state the assignment's purpose (what skills students will practice & what knowledge will be gained), task (what are students expected to do and *how* they should do it – provide guidance so students can focus on the task); and criteria (expectations for assessment, and examples of good work and work that hasn't met expectations).

The following instructions will be supplied, along with an in depth overview of the project in class. This sheet does not represent the entire application of the TILT method. The project overview will include specific instructions about exploring the InVEST website, an interactive exploration of the site by students, how and where to find GIS layers, and a demonstration of how to work with a model, including loading layers and interpreting data. An accompanying grading rubric further specifies how to be successful. Finally, examples of a good project will be given, along with examples of a project that would not meet expectations. For the first time teaching this course, I would generate examples; thereafter, previous student projects will be used as examples of exemplary work (with permission and/or anonymous).

Purpose.

You will practice using publicly available data and free, open-source software to map and value service from nature that support human well-being. You will practice some GIS skills and learn how a particular location provides benefits to people and (for some) what the economic value of the ecosystem services are. You will work in a small group and leverage each participant's expertise and skills for a successful project. This assignment will help you better understand the ecosystem services concept, help you to visualize a landscape in terms of its functions and explain the value to others, and will give you practice working as a project collaborator.

Task.

Select one of the following InVEST models (give a few choices – e.g., habitat quality, sediment retention, water purification). Identify a place where you want to estimate the ecosystem services in the model (e.g., state park, military installation, coastal county, hometown, etc.). Pitch your project idea and rationale to me for approval. Identify a change in conditions or create a scenario (e.g., restoration, development, sea level rise) if you model requires one; and use publicly available GIS data to populate and run the model. You will then report your project process and results (quantified ecosystem service(s), in either economic or biophysical terms) in individual written project briefs (~ 5 pages) and in a group presentation.

Criteria.

To meet expectations, you and your team need to conceive a reasonable and defensible project idea, run an ecosystem services model, and produce measured results (i.e., a quantified ecosystem service (e.g., tons of carbon, etc.); carry these results out to monetized estimates if you stated that in your approved project plan. Each person will write a short report describing the project, from idea and justification to methods for running the model, and results, along with a discussion of the application. Finally, the team will present the project to the class. **See the grading rubric for specific details about assessment and success!**