Describe the key ecological, economic, aesthetic, or other problems your group identified related to your scenario.

- Ecological problems
    - Hybridization of cattails leads to vigorous invasive species that can outcompete native species
    - Interfering with animal habitat and fish populations
    - Affects wetland ecosystem services
    - May change the bottom habitats and morphology of Chesapeake Bay
- Economic problems
    - Invasive cattail species may inundate farmland and could destroy crops
    - Tourism to the region may experience a decline due to cattails outcompeting native plants and driving away native fauna
    - Crab industry may be affected by changing ecology
- Aesthetic problems
    - Cattails may interfere with native species that the region is known for (blue herons, blue crabs, osprey, native plants)
    - Invasive species can disrupt the environment, changing the appearance of the area
    - Cattails explode when they are ripe and get fuzz everywhere, which is ugly
- Other problems
    - Could hurt crabs, which taste good :(

Describe the questions that guided your group's model building.

- How does human activity shape eutrophic sites?
- How abundance is different in/out of eutrophic sites?
- How do the new/invaded habitats compare to native habitats?
- In what ways are the native species disrupted?
- What is the rate of hybridization/how common is hybridization?

Which items in Epstein's *Sixteen Reasons Other Than Prediction to Build Models* helped guide your group's model building process?

- *2. Guide data collection:* we can infer that the cattail abundance will impact other species and the environment in general, but how? What species will become more abundant, and which will be harmed?
- 4. *Suggest dynamical analogies*: what other systems work similarly to the Chesapeake?
- *5. Discover new questions:* the lack of information on the origins/native range of invasive cattails may be investigated to inform the model.
- 8. *Illuminate core uncertainties:* the scenario displays cattails that become invasive in some areas and not in others.
- *16. Reveal the apparently simple to be complex:* Initially, it appears to be overpopulation of cattails, yet looking closer hybridization is complexly involved.

Briefly describe each group member's contribution to the activity:

- I (Olivia) was the group scribe

- We went around and discussed each of the suggestions to consider first and questions to ask as we refine our model
- We then all went into this document and collaboratively answered the report questions, drawing form the notes of our brainstorming

Additional Questions:

I am unclear about the differences between mechanistic and phenological (sp) models – Doug