



Understanding Our Changing Climate Unit 1: Student Homework

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Many different people and groups—stakeholders—affect and are affected by sea-level rise. Before learning about the scientific data related to sea-level rise, you will first consider the ways it can and is impacting society and the main stakeholders involved. You will need to be ready to discuss the topics below in class, particularly #5 related to stakeholder groups.

Complete the reading your instructor has given you and answer the following questions as homework before coming to class.

1. Which two specific problems caused by sea-level rise do you consider the most important? Why do you consider these problems more important than the others?
2. Give an example of how one problem caused by sea-level rise amplifies another problem. You can think about this with respect to what resources, financial or otherwise, are needed and available to respond to a particular problem.
3. Are there any positive impacts of sea-level rise on the various communities/stakeholders described in your reading? Do these positive impacts outweigh the negative consequences of sea-level rise?
4. Greenhouse gas emissions are implicated as the major contributor to climate change and sea-level rise. Industrialized countries contribute significantly more greenhouse gases than poorer, developing countries; similarly, within developed nations the poor or rural communities often have fewer resources to respond to sea-level changes. For example, the United States is responsible for approximately 23% of global carbon dioxide emissions annually. What (if any) role should developed countries like the United States take in assisting those communities impacted by sea level change?
5. There are two major strategies proposed to address the effects of sea level rise: 1) *Mitigation*, a strategy by which steps are taken to stop or slow down sea-level rise; 2) *Adaptation*, which is seeking ways to adjust to sea-level rise if it seem unavoidable. Do you believe that mitigation or adaptation is a more feasible strategy for the community in your reading? Why? What about for your community? Why?
6. Calculate what the sea level will be in 2100 using the linear trend that is observed in the sea-level tide-gauge data for the period of record for the data. Speculate as to how this change may be enhanced by the tidal cycle (spring vs. neap tides) and how this would impact storm surge events.
7. Consider different groups of people in society (particularly considering the reading you did). What are five potential stakeholder groups who might be impacted by sea-level rise or whose actions might be influencing sea-level rise?

Answer will be graded based on the following criteria:

- 3 points = answer is reasonable and, where asked for, well backed up with evidence or justified with thorough argument
- 2 points = answer is reasonable and, where asked for, at least somewhat backed up with evidence or justified
- 1 point = answer not completely reasonable and/or lacking supporting evidence or description
- 0 point = incorrect answer